Issue No. 18 December 1958

AIR COOLED NEWS

PUBLICATION OF

THE H. H. FRANKLIN CLUB

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H.H. FRANKLIN
MFG.
COMPANY.

AIR COOLED NEWS

PUBLICATION OF

THE H. H. FRANKLIN CLUB

Vol. VI No. 3 DECEMBER 1958

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This issue carries the story of the delightful little cross engines. This same story was first published in the ANTIQUE AUTOMOBILE, and as they and not the writer hold the copyright a simple and prim little acknowledgement to them appears with the article itself, this is the only recognition that was suggested.

But the acknowledgement falls far short of expressing our debt to the ANTIQUE AUTOMOBILE and the Antique Automobile Club of America. From the earliest days of our organization the AACA, in the person of the late Jerry Duryea, undertook to give us a hand. Risking the displeasure of devotees of other makes he would call upon our President to make a few remarks at Glidden dinners and one year appointed our President a member of the Tour Committe as a representative of our group. This obvious backing of what some called "splinter clubs" was definitely a factor in our continued success. While Editor for his club, Mr. Duryea requested a major Franklin article, the story republished here was the outcome of that request. It won the McKean Trophy for its author. Following Jerry's passing L. Scott Bailey was appointed editor. Scott has continued the friendliness and helpfulness toward us and the other smaller clubs. Scott Bailey and his assistant, Charles Betts, have been at hand to give encouragement and assistance to our club, its publication and its appreciative editor.

Fred Johnston, member from Pennellville, New York, gave us the inside cover picture while on Denman's Island during the 1957 Trek. The late John Burns identified the driver as Harold Palmer who worked for him in the Experimental Department.

This is, no doubt, Franklin's first venture into the commercial field and was probably only built for the company's own use. As far as we were able to learn at the time no such vehicle was regularly offered.

The light delivery is mounted on a regular 1905 cross engine chassis which has been modified to the extent of considerably lengthened sills and, of course, longer chain and radius rods. It is almost certainly Franklin's first use of demountable rims.

Front cover is a scene from the 1904 Transcontinental. From Mrs. Carris' personal collection.

The inside cover picture of a Type E crossing a bridge is by our late member Albert Mecham.

Rear cover advertisement, showing the first Model D as well as a Type F of 1905 was provided by David Bausch.

When this last 1958 issue arrives 1959 will have started. For this reason we are departing slightly from our custom and are listing the Officers and Staff who are taking over for '59.

To some of the newer members a few comments on our past might be of interest.

Our club was formed during 1951 at a meeting of a handful of Franklin owners in Ralph Hamlin's gardens in Los Angeles. So we are entering into our ninth year as a Club.

During the years we have slowly grown from about ten original members to close to six hundred. As with all such organizations some members have lost interest and dropped out, some others have developed an increasing interest and have become very active in the affairs of the club, the steady foundation on which the outfit stands is the hard core of half a thousand members who faithfully back up the organization, year after year. The faithful and hard work done by those handling club affairs could not be accomplished and would have no purpose without this wonderful group of "steadies" who have insured the growth and continuance of our club.

At first it was organized apparently only with the idea of providing a means through which Franklin history might be assembled and recorded. A magazine, AIR COOLED NEWS, was started as the vehicle by which this might be accomplished. After several years of drifting Mr. Thomas Hubbard, editor of that magazine, took it on himself to start a reorganization, he appointed, with questionable legality, a board of advisors who in turn elected a president from their number. This president took a vigorous hold on the club and with the completely loyal backing of the advisors started the reorganization. As an example of the loyalty and mutual trust of these advisors, no one of whom had met any of the others, everyone of them backed with a substantial check and no questions the president's program to secure a car emblem. You have all seen the result of this project, certainly the finest emblem any club could boast. Then this president, with little immediate aid, proposed and organized our first actual car event, The Franklin Trek. Instead of being the usual stiff gathering of strangers that was feared by the organizers, it was an immediate and unqualified success. The Club was on its way. From that point on plenty of help and hard work was offered by many members. Stens were then taken to set up proper organization and this president was officially elected to a second term. Plans were made for the second Trek, which was again a complete success. The annual meeting was combined with the Trek and at the second affair a new president and some new board members were elected. This new president also took aggressive action and in his two terms brought the club to a new high in membership and the Trek became, under him, a well established event that has changed almost not at all in plan in the following years. A year ago another member was elected as the third president and again some new board members, by this time the organization was running along pretty smoothly and, except for an unusually well planned Trek, there were few highlights of the year. This president declined to accept reelection so, once again, another member took over the helm. This man, one of the original members, will be our pilot for the coming year.

cont'd on page 23

THE CROSS ENGINE
FRANKLIN

BY MILES S. AMICK, CUMBERLAND, MD.

PROBABLY all types of automobiles have inspired a certain loyalty among their owners to varying degrees. Even the prosaic cars of today have their champions.

But no other car ever inspired the extreme partisanship and fierce loyalty that was, and is, a part of Franklin ownership. The Franklin Company went the way of so many other builders of fine automobiles, but the loyalty it engendered lives on.

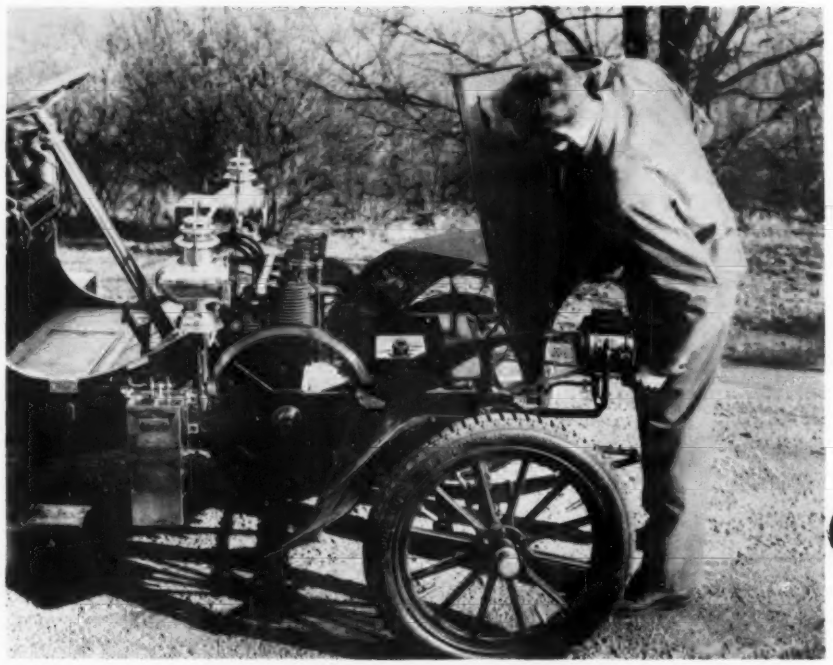
There exists today a growing club of Franklin owners and enthusiasts, the H. H. Franklin Club, of which the author is the current president, which has inherited the same spirit. An incident during last year's meeting of this club in Syracuse is an example of this spirit. One of the members sat in his car for an hour and a half waiting for a vapor lock to clear. He was only a block from the garage, but it was unthinkable that a Franklin should suffer the indignity of a tow-rope in its own hometown!

This article will tell a bit about the early years of the car. It will make no attempt to explain this extraordinary loyalty, except to quote a few words from Admiral Byrd when asked why he devoted his life to unprofitable exploration. " . . . anyone who could understand the answer, would not have had to ask the question."

This article should be the story of men like Herbert Franklin, John Wilkinson, John Burns, and many others, but I can only touch lightly upon the men, and then must go on to the cars they built.

Herbert H. Franklin was born in upstate New York around ninety years ago. As a young man he was engaged in the newspaper business in Coxsackie, New York. After coming to Syracuse, he met Herbert Underwood, about 1889. Underwood was seeking help in developing a new method of casting metal under pressure. Franklin undertook to perfect the method; coined the name "Die Casting," and organized The H. H. Franklin Manufacturing Company to carry on this work.

The early business of the die casting company was carried on at the C. E. Lipe Shop in Syracuse. At that time this shop was used by many inventors of various things in producing their experimental models. One day, after the collapse of The New York Automobile Company, John Wilkinson met Franklin at this shop, and invited him for a ride in his early car. Franklin accepted, was immediately impressed by the superiority in speed of the little vehicle, and became interested in the idea of manufacturing the car. Very soon afterwards Franklin formed a partnership with Alexander Brown, called "Brown and Franklin," with Alexander Brown as president, this organization signed a contract with Wilkinson and began the development of the car. Somewhat later this partnership was sold to The H. H. Franklin Manufacturing Company, and the business continued under that name.



The author shows the complete accessibility of the power plant. 1905 Type F. RUHL STUDIOS

Under the supervision of Wilkinson the experimentation and development went on. After building two pilot models; and the usual bug-hunting, it was decided that the car had reached a production form and manufacture was begun. In that first year of 1902 thirteen cars were produced. The company was in business.

Mr. Franklin was not an engineer, his genius laid in other lines. Perhaps his own words give a better picture . . . "You will see that I was not the inventor of die castings, I did coin the name; nor did I invent the air-cooled motor. I simply, with very little capital at the start, developed both ideas and brought both into general use." Mr. Franklin served as the active head of his organization to its end, longer than any other man in the industry. Part of his genius was in his ability to spot fine minds in other and younger men, many top places in the organization were held by men bare-

ly past thirty, or even under. Today, over ninety, he still makes his home in Syracuse.

John Burns, one of the most important men in the technical development of the Franklin was not even an engineer in today's stilted definition of such titles, but in actuality he was one of Franklin's finest engineers. His ability to almost instantly reach right to the heart of any mechanical problem was, according to many of his contemporary associates, not equalled by any other man.

I will not attempt here to write the story of John Burns. It has been well done by another who worked with him many years.* John Burns was born around seventy odd years ago in Syracuse. After the usual schooling he devoted himself to mechanical pursuits. Around 1898, or so, he became associated with John Wilkinson when both worked for a bicycle company. This association determined his career. He was so wrapped up in Wilkinson's experiments with the air-cooled engine that a year or so after Wilkinson's association with Franklin he joined that organization, to remain for many years about the greatest of Franklin men.

John Burns still lives in Syracuse, seemingly untouched by years. In the preparation of this article we have called repeatedly on John, his memory for details is unbelievable. Many of our questions directed to others have brought this reply, "I think so, but you had better write Johnny to be sure."

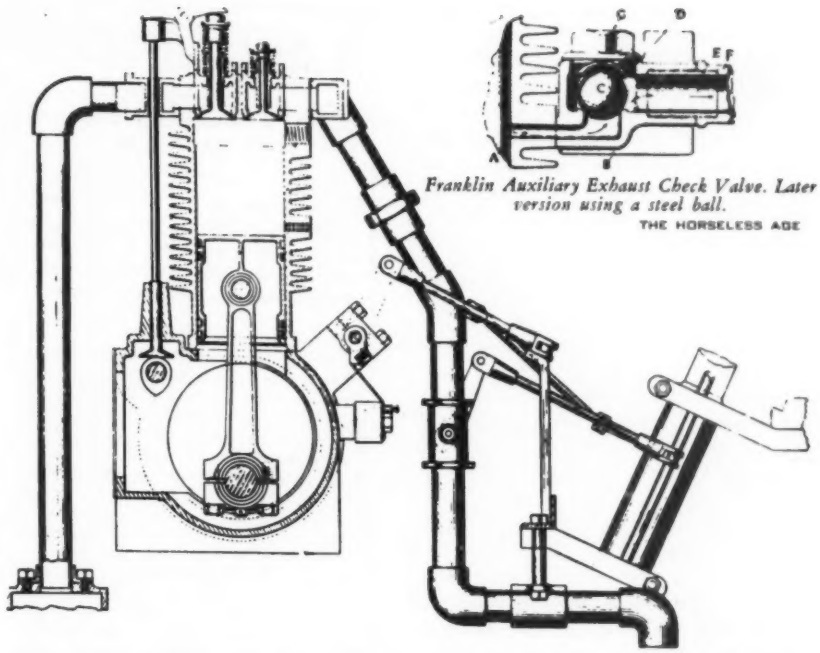
John Wilkinson * was born in Syracuse, attended school there, and was graduated from Cornell in 1889. While at Cornell he was a member of their first football team, the tennis team, and the basketball squad. In his time he was also a great bicycle racer. This love of sports never left him.

He began his experiments with air-cooling shortly before the turn of the century, and by 1900, had progressed to where a company of his friends, The New York Automobile Company, was formed to manufacture his car. Disagreements about many things brought about the dissolution of this company and resulted in his association with H. H. Franklin.

His early car resembled the usual small steam car of its day outwardly. He was dissatisfied with this type, and following the connection with Brown and Franklin started design of the little car along more pleasing lines. In addition to air-cooling, Wilkinson's conception of an automobile called for multiple cylinders, flexibility in both control and construction, light weight, and above all, simplicity. Throughout the period of Mr. Wilkinson's direction of design the Franklin never abandoned the full elliptic springs, for he felt that comfort and easy riding were of great importance. It may best be expressed in his own words, "In fact it was easier to make a heavier car. In order to build a light and efficient car it required more thorough designing and choicer materials. Of course the finer they were made the more expensive the making of the car became . . . The finer parts had to be more carefully adjusted, and that, of course, meant more work and took more time to assemble the car."

For reasons not generally known Mr. Wilkinson left the Franklin organization in 1924. In a true sense he never retired, for even at the time of his death at 83, he was working on designs for a new engine.

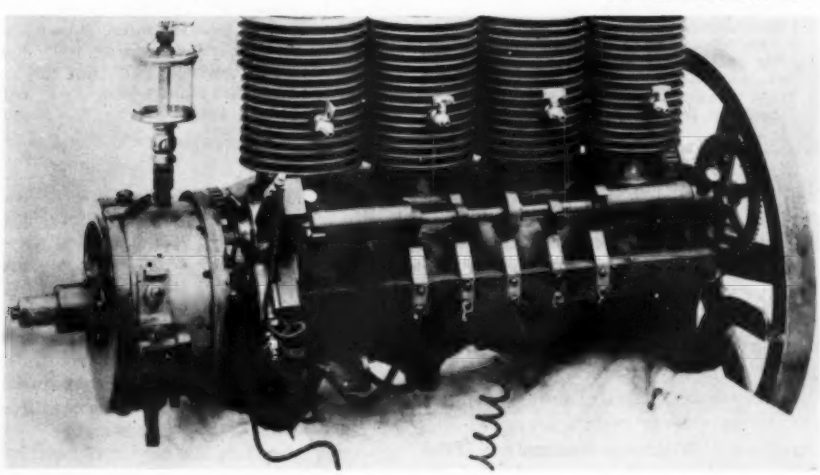
While the Franklin car was manufac-



Franklin Auxiliary Exhaust Check Valve. Later version using a steel ball.
THE HORSELESS AGE

Sectional view of 1902 - 1903 engine. This shows non-adjustable push rods used first two years, and the automatic intake valves used until 1905.
THE HORSELESS AGE

The unusual ignition bar used in 1902, and 1903. Petcocks were primarily for "flame test" use.
SMITHSONIAN INSTITUTION



* "THE TWO JOHNS," by Carl Doman, *Air Cooled News*, December, 1954.

tured for thirty-two years, I have chosen the first five years, a period of very interesting cars and a period in which the company firmly developed the principles which were to guide its design for many years. Later years brought economic pressure that forced the company to depart from a few of its engineering principles, but never did it, for a single car, abandon its fundamental creed, air-cooling. An illustrated article in *The Horseless Age* of July, 1902, stated that the company was also making a light tonneau model to be fitted with a water-jacketed engine. This story quite naturally caused many people to believe that Franklin did at one time make water-cooled cars, and the belief still exists. Actually the Franklin Company never sold or even made a single water-jacketed automobile. In reply to a letter on this subject, Mr. Franklin says, "The persistent story you speak of in your kind letter of November 30, (1954), is indeed a "myth." The Franklin Company owned and operated water-cooled cars at various periods, but never found any reason for making a water-cooled car." This "myth" was probably further nurtured by the fact that John Wilkinson, an ardent motorboat enthusiast, powered most of his boats with Franklin engines that he converted to jacketed types. This same *Horseless Age* article, for reasons unknown to anyone at this late day, illustrated the article with pictures of one of the two known prototype engines, showin a flathead engine. However, this type engine never went into the production models. To further clear up this article, in case any reader is familiar with it, the light tonneau mentioned was produced in 1904, air-cooled of course, and the larger 5 x 5 inch "wagon" as the article called it, was also produced in 1904.

As I have chosen to deal only with the history of Franklin's little chain drive cross engine cars I will only add, for the record, that the company produced, in small quantity, several models of four-cylinder in line shaft driven cars during this same period and also, at the end of 1905, produced their, and America's, first six-cylinder production automobile.

Signing a contract with Brown and Franklin on July 1, 1901, John Wilkinson began the actual design of the Franklin car. It was to be a light weight, flexibly constructed car, powered with a four-cylinder overhead valve air-cooled engine, and generally to include the features that had made the prototype car so outstanding, not the least of which was the then not widely understood importance of unsprung weight. Wilkinson was not the first to build an air-cooled automobile engine, he undoubtedly was the first to build a successful one. Previous attempts had centered on big single-cylinder jobs. These were invariably relatively high speed motors so as to develop the required power, and they were successful only as long as they were able to maintain a good forward speed. Wilkinson reasoned that if the rpm. were lowered to the order of around 1,000 to 1,200 and sufficient power provided so that the vehicle normally ran at a somewhat reduced throttle,* the liability of overheating would be drastically reduced. To accomplish this practically he used four cylinders of rather small bore, this incidentally allowed him to raise compression to around 65 pounds under full load, rates well above foreign air-cooled practice. He further understood that the prevailing practice of speed control through spark position was wrong, and first used throttle control and float feed carburetion. He also placed both valves directly in the head, thereby reducing the amount of inner wall surface exposed to combustion heat. Simple as all this sounds today he still was the first in America to use any of these principles.† He also understood the problems of crankshaft whip, and his first engine contained five main bearings and was built on a barrel crankcase, a type that many years later was one of the basic features of the famous Miller racing engines.

This radical engine, for its day, was mounted in a wooden and angle iron frame, with extreme flexibility throughout. It carried full elliptic springs fore and aft, the rear ones being mounted outboard on pivots. A very compact, fully enclosed planetary transmission, with bronze bands, was mounted directly on the crankshaft and drove through a single chain to a spur gear differential.

TO MAKE AUTOMOBILES

THE H. H. FRANKLIN COMPANY WILL BRANCH OUT.

An Increase in the Capital Stock From $100,000 to $250,000—A. T. Brown Is President of the Company and John Wilkinson's Machine Will Be the Company's.

The H. H. Franklin Manufacturing company is preparing to begin the manufacture of automobiles. A meeting of the stockholders has been called for Thursday, November 14th, when it is expected the necessary legal steps will be taken to increase the capital stock of the company and to make the necessary changes in its charter.

At present the company's business is that of making dies, tools and finished castings, which requires the full capacity of its plant in Geddes street and an entirely new plant will be built for the automobile department. This will be installed immediately after the meeting November 14th. The new location is not decided on, but will probably be in the factory building at the corner of West Fayette and Geddes street.

The automobile to be manufactured is John Wilkinson's latest product, a model machine which has recently attracted a great deal of attention among automobilists. It is said to possess many advantages over any of the other makes, not excepting the Freudi machine. The motive power is gasoline and the motor is of extraordinary power and simplicity.

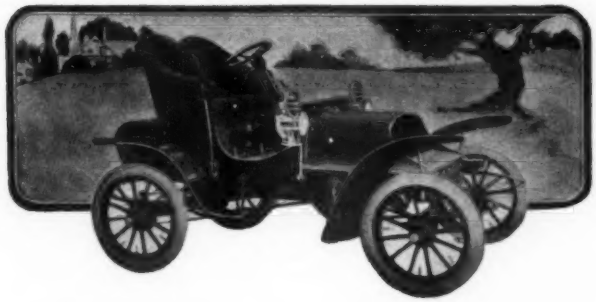
The capital stock will be increased from $100,000 to $250,000. A large amount of the new capital has already been subscribed, all the present stockholders of the company being subscribers. The president, Alexander T. Brown, and the treasurer, H. H. Franklin, are large investors. It is understood also that many prominent local capitalists are interested, but their names could not be learned.

An officer of the company stated today that it was expected to have the plant in operation within a month, but that no effort would be made to supply machines for the market this fall.

* That he accomplished this is evidenced by our '05, the difference in road speed between one-third throttle and full throttle is only about 7 mph.

† Wilkinson, thus Franklin, was first in America with four-cylinders, valves in head, float feed carburetor, throttle control. It was also the first with six-cylinder engine, 1905; first automatic spark advance, 1907; first full recirculating pressure oiling system, 1912. *SAE Journal,* August, 1951.

As our fourth issue devoted to a particular period of Franklin we are presenting THE CROSS ENGINE FRANKLIN by Miles Amick. This story apepared in Volumes 19 and 20, 1955 - 1956 of the ANTIQUE AUTOMOBILE and is reproduced through the courtesy of the Antique Automobile Club of America.



This picture of Type E is taken from a 1905 advertisement: "Gentlemen's Roadster or Light Runabout. This is our new type two passenger car, the novelty of the year. It is by far the lightest, speediest and finest car in this class ever built. 12 horsepower, four cylinder, air cooled engine; weight 1000 pounds; ironed for canopy top. Speed 40 miles an hour. Price $1400." This shows still another, and final, modification of the hood. The first two years had straight sided panels with a small door on top, then in 1904 came the slightly crowned top and curved sides, still retaining the door and with wide brass strips on the sides; tonneau types in 1905 retained this style, but less the door and with an improved grille. The Type E shows the more rounded hood without brass and while apparently a transition style was actually influenced by the round hood already adopted for the larger models rather than being a step toward that style.

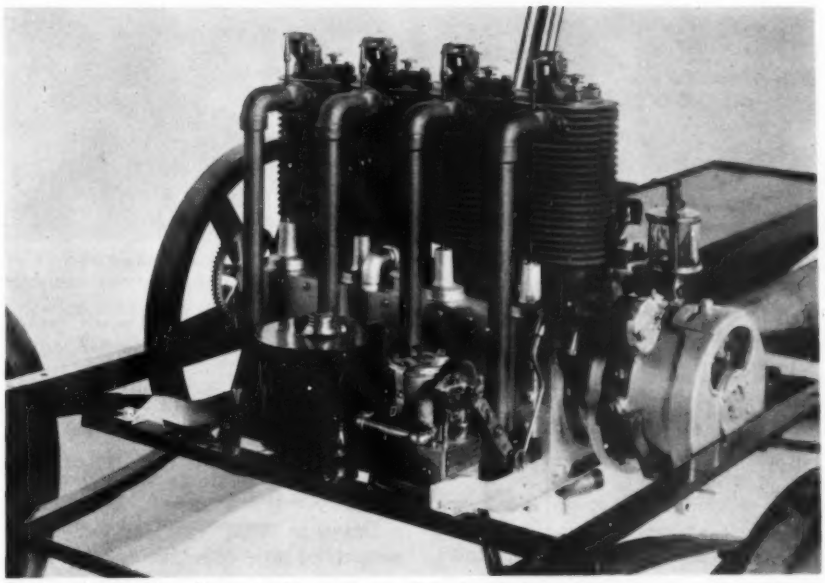
Even in Wilkinson's first car he understood the features that were to make Franklin one of the most roadable cars ever built, for his earliest steering unit was well ahead of its time in ease and accuracy of steering.

This steering unit, which appeared on certain other cars also, was manufactured by Lipe. It is of unusual design, fully enclosed, and comprises a worm gear that is swallowed by a bronze half-sphere, not unlike a plumber's helper, that has internally cut teeth. Very accurate adjustment of backlash can be made by a screw adjustment that moves the plate containing the gear and pitman arm in or out of depth with the "plumber's helper." The worm gear is a full gear and can be shifted on its shaft so as to expose a new arc of surface to the internal gear, this may be repeated three times. The same type of gear was used throughout the cross engine period.

The first engines had automatic suction valves and continued this practice until 1905 when mechanical intakes were fitted and the first of Franklin's famous auxiliary exhaust valves appeared. This first auxiliary exhaust was fitted so that the piston cleared a slot just about a quarter inch before the bottom of the stroke, the valve itself was a simple check valve. These auxiliaries were led to the common exhaust pipe through individual pipes, as were the main exhausts at the front of the engine. Franklin abandoned the auxiliary exhaust with the 1912 car, it is interesting to note that it is again being experimented with.

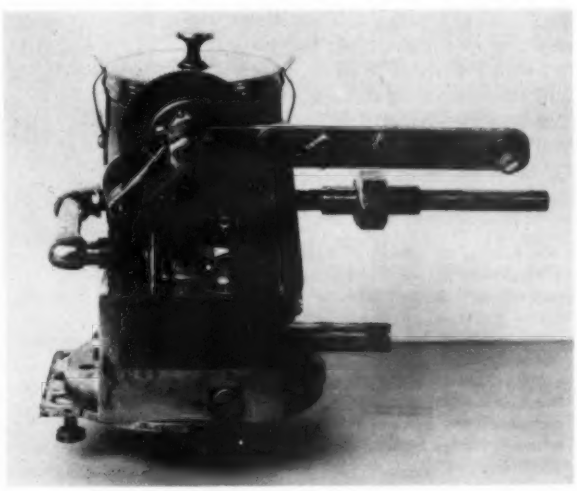
The mechanical intakes improved the performance quite a bit, probably had much more to do with it than the auxiliaries, the engine now produced 12 hp.

No doubt the transverse position of the engine as well as the period when the car was designed dictated the final drive by single chain. However, the designer was again on the right track. This drive added its bit to the already wonderful flexibility of the whole unit. I believe there is no method of power transmission, except the action of solid rods, that provides anyways near the efficiency of chains. It is a phenomenal figure compared to shaft drive, there is no backlash, it is a natural shock absorber, and of course the load is spread over many teeth at a time instead of con-



Engine of 1902 Averell car. Ignition system and push rods have been altered on this engine to 1904 design.

SMITHSONIAN INSTITUTION



The metering Rochester Automatic lubricator used the first two years.

SMITHSONIAN INSTITUTION

Mr. S. G. Averell in first Frankin sold, 1902. SMITHSONIAN INSTITUTION

centrating on one as in the case of a bevel drive. The life of a decently attended chain is quite long, many thousands of miles of ordinary service.* To some who are on the fastidious side they only spell grease, grime and clatter, but to me the singing of a well adjusted chain is all part of the music that is now so assiduously avoided in our cars.

The first two years only runabouts were made, and they were fitted with wooden bodies built by John Leggett Carriage Shop in Syracuse. Later, 1904 and 1905, aluminum bodies were built in the company's own shops on Geddes street. The aluminum detachable tonneau made in the factory weighed a bare hundred pounds.

The engines for the first two years were fitted with an unusual ignition device consisting of an exposed shaft that made contact with a series of brushes. This may be easily understood by reference to the photograph of an early engine. It may be noted here that the fully authenticated Averell car in the Smithsonian does not have this device, however, the Herz timer was adopted late in 1904, and many earlier cars were converted, including Averell's car of 1902.

Lubrication was by a mechanically driven pump feeding to the crankcase from which it was splash. The type and location of these oilers varied considerably over the years.

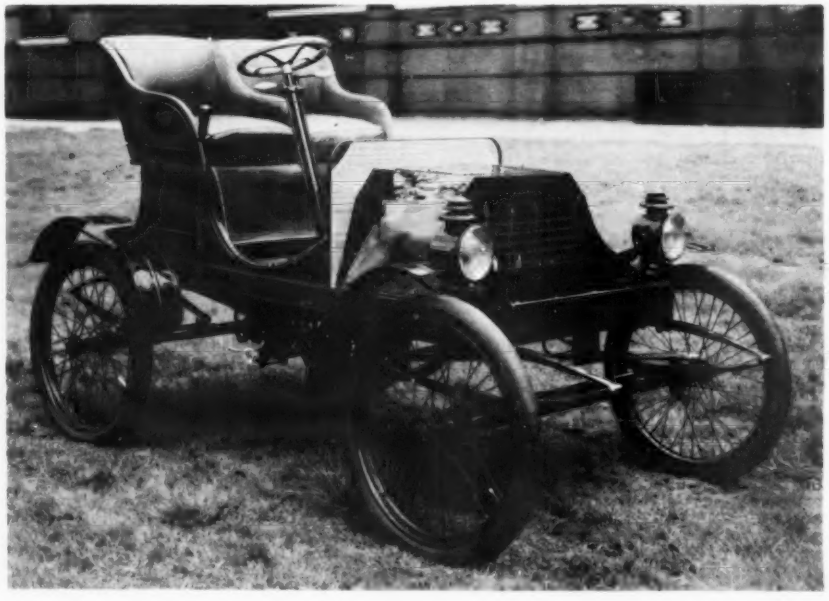
Drawings of the first car included a compressed air starter that had been developed by Wilkinson before joining Franklin. I have been unable to determine whether or not this was actually fitted to production cars, though probably not, as the air starter was heavy and bulky, and Wilkinson himself, with his creed of lightness and simplicity did not hold out too much hope for its success. However, company descriptions of the car mention it. The first cars did, however, carry a friction driven Apple Dynamo with storage battery for ignition. Late in 1904, this was given up and the usual dry batteries substituted. 1902 and 1903, had a single contracting brake on the differential, which was changed to internal on the rear wheels in 1904, and again changed to Raymond external brakes in 1905.

1902

After a long period of experimentation and test on two preliminary cars, the company finally began production for 1902.

The first car, Type A, was a roadster equipped with a two passenger wooden body. In this first model the sides and back of the seat were flat, upholstered in leather with the oldtime square pattern. It had a wheelbase of 72" with standard tread. The frame was of wood with a sub-frame of angle iron to which the motor was bolted by two steel cross arms. It had full elliptic springs all around, slanted upward several degrees, the rear ones being mounted outboard and pivoted. Front axle was a straight tubular job using ball bearings,

The 1902 Averell car restored. SMITHSONIAN INSTITUTION



* Mr. George C. Green of Lambertville, who undoubtedly has more chain-driven miles than anyone still around, tells me that the chain he is presently using has already turned in over 30,000 miles and on inspection checks "almost like new." He does state that under the conditions of dusty and sandy roads that prevailed when these cars were new that such mileages woud not have been probable —more likely a third of today's possible life.

rear axle and spur gear differential were made by Brown-Lipe, and the differential carried a single external brake band. Wire wheels were used mounting 28 x 3 tires. The hood of this first model was of metal formed into flat panels with a grill of banker's cage. It was hinged at the front and could be tilted forward for access to the engine. Steering was by the Lipe gear described earlier in this article, placed on the right side with the drag link crossing diagonally to the left spindle. Joints in this and the tie rod were ball type with no adjustment being provided, alignment was secured by bending these rods.

It was equipped with a two-speed planetary transmission designed and built by the factory, with gears being furnished by Lipe. It was a simplified, light transmission, mounted on the extended left end of the crankshaft, all contained in an oil tight steel case bolted to the end of the crankcase. Low and reverse were actuated by contracting bronze bands, while high used an expanding bronze surfaced drum actuated by a rocking cam. Adjustment of low and reverse was by sliding external brackets through which the actuating fingers were mounted. Adjustment of the high clutch was accomplished by adjusting an internal dog, a removable plate on the side gave access to this. There were no internal bolts or nuts, and after removing the case all components could be slipped off the shaft. The transmission ran in oil, supplied externally. Drive was by single chain, the front sprocket being mounted between the engine and transmission. Adjustment of the chain was by two tubular reach rods, with turnbuckles, to the rear axle. Reverse was applied through the left foot pedal, high and low were on a hand lever on the right, mounted through the frame.

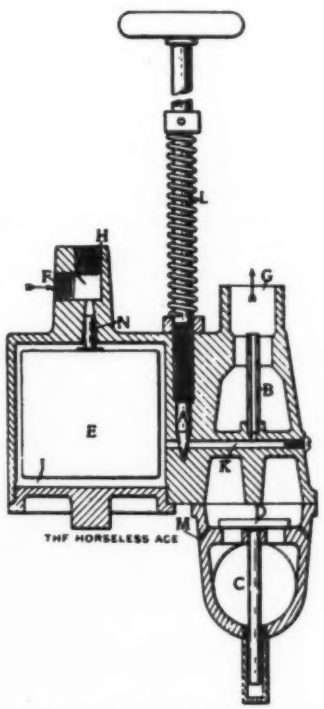
The engine was a four-cylinder with 3¼" bore and stroke, developing a conservatively rated seven horsepower. Rpm. ranged from 300 to 1000. Cast iron cylinders with integral fins and without removable heads were bolted to the base. Valves were in the head, mounted in cages removable by taking out two capscrews.

The intakes were automatic, while the exhausts were mechanically actuated by push rods from an internal camshaft. Engine originally was not provided with any adjustment on the push rods, corrections were obtained by installing longer rods or forging out to required additional length. Apparently most engines were later altered to adjustable push rods.

A characteristic peculiarity of these engines until 1905, is that the push rod operated *through* the exhaust pipes, the exhausts being sleeved for this purpose, of course. The crankcase was of the barrel type, cast iron with a single steel inspection plate on the front, a heavy steel end plate being mounted at each end. The engine carried five main bearings, the front and rear being bronze sleeve type, while the three intermediate ones were babbitt carried in removable mounts. The center main and rod bearings were die castings produced in The H. H. Franklin Mfg. Co.'s plant. Sometime later the front bronze bearing was replaced with a die cast bearing, and in some cases the rear bearing was replaced by a babbitt lined bronze bearing, the original bronze type having given some difficulty with seizing.

Carburetion was by a Franklin designed and built float feed, needle valve controlled, cast bronze carburetor, it was provided with a barrel type throttle valve. The needle valve control was extended through the floorboard close to the dash, a Franklin practice for many years to come. This is the first carburetor of the type to be regularly used in this country.

Ignition on this engine was quite interesting. Current was supplied by an Apple Dynamo, friction driven from the flywheel, with storage battery for starting. A single coil was used through a device called the ignition bar. This was driven from the flywheel end, it had four cams, similar to a camshaft, simple brushes mounted on an auxiliary bar contacted each of these brushes and distributed the high-tension current on the same principle as the later rotary commutators.



Sectional view, Franklin carburetor 1902 to 1905.

Final lubrication was by splash. A metering pump driven by an eccentric linkage from the camshaft maintained a supply of oil in the crankcase. This amount was variable by adjusting the linkage and was proportional to the engine speed. The oiler supplied in 1902 and 1903 was "The Pony Rochester Automatic Lubricator," made by Greene Tweed & Company of New York.

The first actual sale of a Franklin was the sale to S. G. Averell* of New York of the first 1902 off the production "line." The next four went to H. H. Franklin, Willard Lipe, John Wilkinson, and Alexander Brown. In all, thirteen were produced and sold. The 1902 cars carried no serial numbers. Of these thirteen, three are reported to exist, the best known one being the Averell car in the Smithsonian Institution.

1903 brought about very little change in the car. It was again a two passenger roadster with a wooden body built in the John Leggett Carriage Shop. The seat was changed, however, from the slabsided affair of the first models to two deeply swelled bucket seats. Wheelbase and tread remained the same. Wheels were changed to wooden artillery types with a new hexagonal type hub cap, still using ball bearings. Tires remained the same size. The hood, of metal, was still the severe flat panel style of 1902, and also contained a door in the top panel for access to oiling rockers or other minor chores. The grill was the same banker's style as before.

Transmission was unchanged, and the single chain drive was again employed. It retained the single contracting brake on the differential with a non-locking pedal. It should be borne in mind that on all cars using this type of transmission the reverse afforded an additional brake, and a powerful one. Mr. Burns states that they customarily used the reverse pedal as a service brake.

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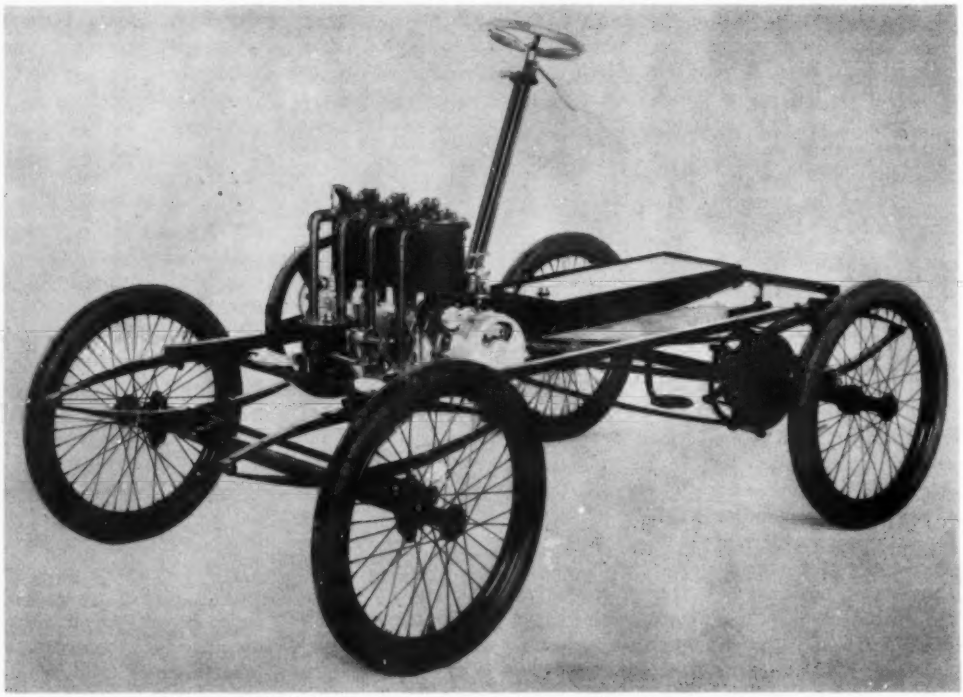
* For those interested Averell was an uncle of the present Governor of New York. Averell was for many years active in Franklin affairs, chiefly in conducting economy runs, though not a regular employee of the company.



Showing the simplicity and flexibility of the chassis. This does not show the wooden frame sills. SMITHSONIAN INSTITUTION

1903

Throughout 1903 the cars were apparently fitted with the identical engine used in 1902, as we are unable to discover any appreciable change either in records or in the few 1903s available for checking. In the 1902 and 1903 cars the carburetor needle valve was extended through the floorboards ending in a small hand wheel only a few inches above the toeboard. In later cars it was brought quite close to the dashboard, raised slightly above the top of the dash and formed with the ball ended tee handle that was characteristic of this control for many years in Franklin cars. As in so many other details, some '02 and '03 cars will be found to be altered to later ball tee handles. The starting crank was detachable and normally carried in leather straps on the kickboard.

The surest method of distinguishing between the 1902 and 1903 is the fact that the 1903 had the bucket type seats, and that no serial numbers were used in 1902. We are informed that some 1903 cars were equipped with wire wheels, but cannot establish this fact.

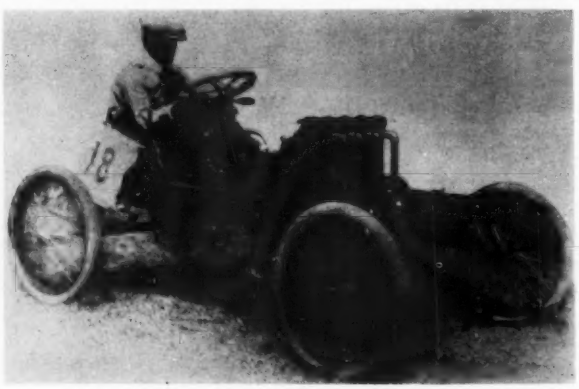
(In all, 219 of these cars were manufactured during 1903, serial numbers running from 1 to 219.) Some of these cars were fitted with a wicker hamper on the deck. Hampers of several different styles were quite popular with the owners of these little cars. As far as we know they were not supplied by the factory, but evidently were purchased as accessories from outside sources.

We have been able to check details on three surviving examples of the 1903 roadsters, and as usual, find variations, though these variations seem to be the result of the common practice of adopting later improvements to older cars.

No. 82, owned by Mr. Powers of Connecticut, retains the original ignition layout complete with ignition bar, Apple dynamo, and even the original storage battery or "accumulator" as they were then called. It also has the regular Rochester oiler, and is fitted with a wicker hamper on the deck. This car has been fitted with the adjustable push rods of the 1904 model. All controls are nickel plated.

No. 102, owned by Dr. Boyer of Pennsylvania, has the ignition bar but does not have either dynamo or storage battery, being powered by dry batteries. It retains the original oiler. Controls on this car are painted. Dr. Boyer's car does have the original push rods, the type without adjustment, corrections were made by forging them out to greater length, or by in-

John Wilkinson and his car photographed at Empire City Track, Yonkers, New York, July 24, 1903. THE AUTOMOBILE



stalling new rods when adjustment was demanded. This car is also fitted with the wicker hamper. Dr. Boyer's 1903, and the 1902 of Mr. Eidelbach of Texas have the only original push rods we have located.

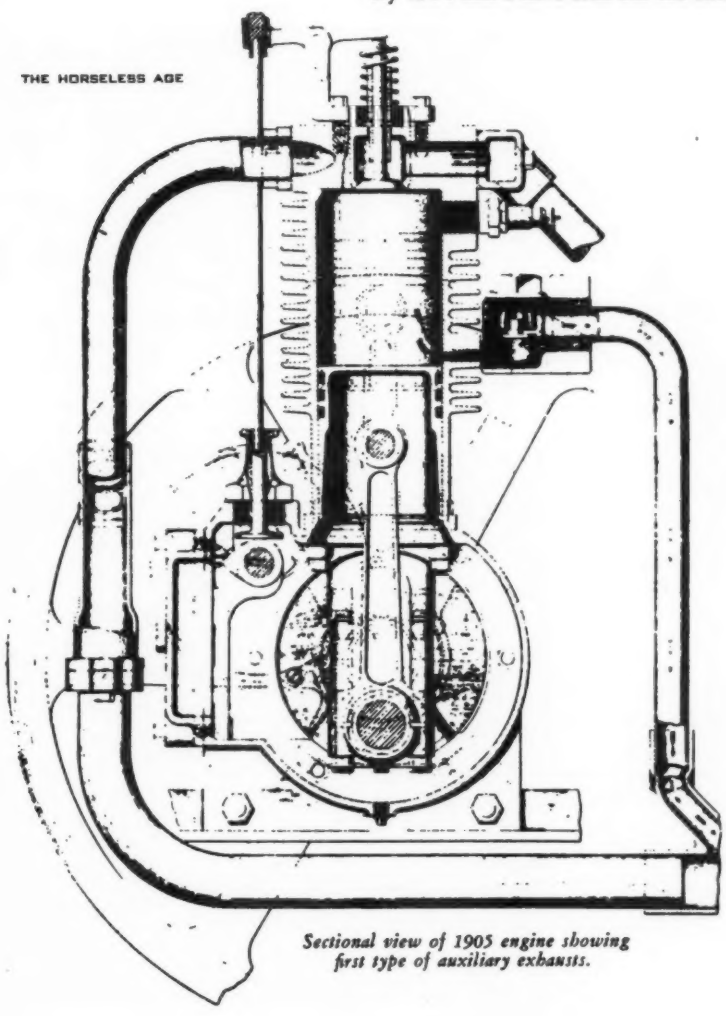
No. 103, owned by Thompson Products, Inc., has the original lubrication system, but ignition has been converted to the 1904 Herz timer and the adjustable push rods have been installed. Controls on this car are painted.

In other respects all of these 219 cars seem to conform to standard specifications of the year.

1904

For 1904 the Company offered an additional model, Type B, essentially the same as the Type A roadster but with a rear entrance tonneau. While the cars were basically unchanged from previous years, a great many improvements were incorporated. All of the 1904, Type A's that we have actually seen have a small wooden or metal hamper on the rear deck. Neither the catalogues or other descriptions of this model mention such hampers, which probably were owner improvements. Many of the 1904 and 1905 tonneau models were fitted with wicker side baskets, again no doubt owner additions as they are not mentioned as factory supplied accessories.

Bodies were of aluminum sheet formed over light angle iron framing. The hoods, also of aluminum, abandoned the severe flat panels for more pleasing curves, and were embellished by broad brass strips along the sides and included the small door on top. The grill was of brass with an improved design of diagonal diamond shaped openings. Franklin advertising and trade journal reviews of the 1904, as well as some early photographs we have seen, describe a new dashboard curved to the general outlines of the hood, however, every 1904 that I have seen has the straight top dashboard. Front fenders were well flared and of stiffer construction. The rear brace on the front fenders was from the top side of the fender to the frame, an awkward looking arrangement that was done away with the following year and a one piece bracket substituted. Wheelbase was increased by 6" to 78", tread remained standard. Wheels were wooden artillery type using Timken roller bearings and mounting 28 x 3 clincher tires. A plain, cylindrical, brass hubcap was used in 1904 and 1905. The usual full elliptic springs were retained, but were heavier, 34 inches long and attached directly to top of axles as before. The car in roadster form weighed 1100 pounds.



Sectional view of 1905 engine showing first type of auxiliary exhausts.

One of the small but important improvements was a loop in the left side of the frame whereby the transmission elements could be removed without disturbing the engine, the wooden sill containing a removable section above this point. The brake on the differential was replaced by internal expanding brakes on the rear wheels, using cast iron brake shoes and a locking foot pedal. Mr. Earl Buchman recalls that these iron shoes were not completely satisfactory, and that he improved a good many of them by adding a phosphor bronze surfacing. The bronze shoes added considerable effectiveness to the brakes, but the long external brake rods extending from the drums almost to the dashboard were prone to become bent accidentally, and made it quite difficult to maintain equal adjustment. The following year's external brakes with much shortened linkage, and with the employment of a whiffletree type equalizer, eliminated most of this problem.

The same transmission as before was used. The opening for adjustment of the high gear clutch was at the bottom of the cover instead of the top as on earlier years. Ratios were 4 to 1 on high, 12 to 1 on low, and 24 to 1 on reverse.

In 1904 the steering column and all control elements were of polished brass, though again we run into a few variations. One car has a tilting steering wheel, another of 1904 has brass spark and throttle controls but both clutch lever and steering column are painted and show no signs of ever having been brass. However, brass controls, and without the tilting wheel, seem to have been the actual standard for the year.

Several improvements were made in the engine. It remained a four-cylinder of 3¼ inches, but the top rpm. being increased

to 1200 and improved ignition resulted in an increase to 10 hp. Adjustments were provided at top of push rods.

The first cars of 1904 saw a transition period between the unique ignition bar of 1902 and 1903, and the well engineered Herz commutator of the later cars. The timer fitted to the earlier run of 1904s was a sort of condensing of the bar type. It consisted of a short revolving drum with four embedded contact surfaces and two sets of brushes which were mounted in stationary arms set at right angles to each other and, of course, bearing on the drum in similar fashion to the commutator and brushes of a dynamo. This device was mounted on the transmission case at the front side of the engine and was driven by a spur gear on the left end of the camshaft, the commutator driven gear also served to actuate the oil pump eccentric. Four vibrator coils were used, powered by an Apple dynamo and a double set of dry cells for starting. The timer adopted in the late 1904 and continued in 1905 was built by Herz and Co., civil engineers, New York City. It was

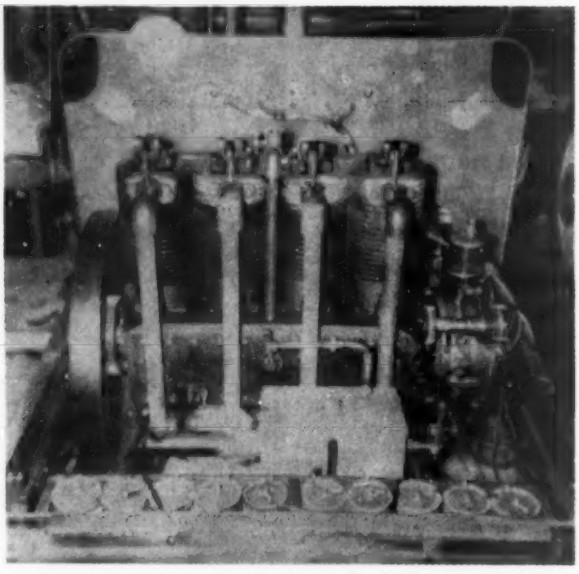
Howard Glisan, early Franklin dealer in a 1904 Type A. W. L. WILSON

1903 with wicker hamper, a popular addition. ANDERSON–BOYER

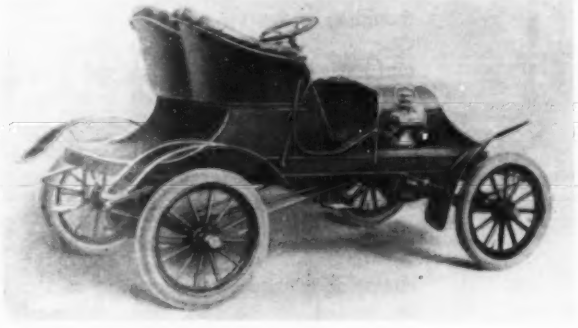
Light Tonneau of 1904.

LONG ISLAND AUTOMOTIVE MUSEUM

1904 engine showing oiler and push rods through exhausts. RONALD ANDREW



From 1904 catalogue, showing curved dashboard and fender bracing from top of fender.



an internal rotor, snap-off type. On our 1905, Type F we have been able to achieve an adjustment on this timer that varies less than 1/16" between cylinders measured along the periphery of a 20" flywheel, quite within modern standards, I believe.

As in the case of the curved dashboard, all descriptions of this year's cars include a dynamo, though I have not seen a 1904 that actually mounts a dynamo. Mr. Buchman tells us that a good many of these commutators were later replaced in service with a chain driven adaptation of the Bosch DU4 magneto. My father recalls that this was done on their 1908 "G". We have not actually run into such alterations in any cars we have seen.

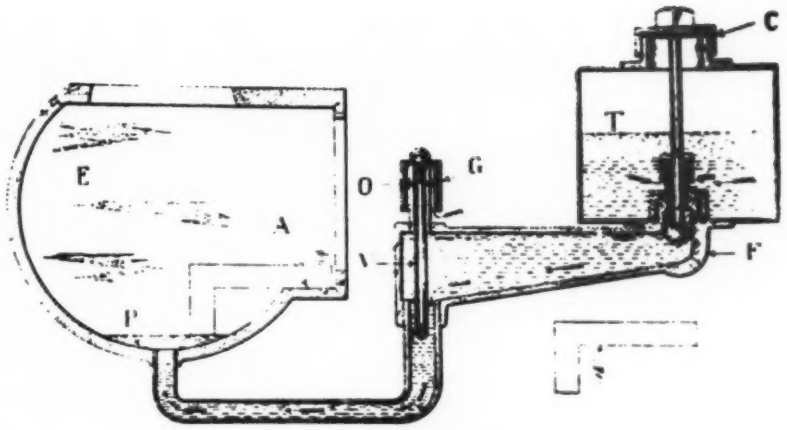
Lubrication, as before, was splash. The Pony Rochester oiler of 1902 and 1903 was supplanted by one made by The John F. McCanna Company of Chicago. This differed little in principle with the earlier oiler, the oiler itself was contained within a rectangular aluminum supply tank and was driven and mounted in the same manner as the previous Rochester type. One 1904 that we inspected has a mechanical pump mounted on the passenger side of the dashboard, outside, and is driven by a wire spring belt from under the hood. This may have been a variation in production cars or may have been an alteration, we do not know.

Standard color of both types was a dark red, but blue and Brewster green were available options.

A total of 701 were produced that year, with serial numbers running from 220 to 920.

1905

In addition to the models already produced in the past year, the company offered two interesting new versions. Type E, Gentlemen's Roadster, was essentially the same as Type A, except that it had a non-removable metal hamper. Type F was a five passenger removable tonneau model with no doors, entrance to the tonneau being through a tilting front seat. In 1905 the customary metal door to the luggage compartment was replaced with a brass bound, highly polished mahogany door. In the Type F this was located in the tonneau. On all types the rear fenders carried out straight to the rear and swept down toward the front to attachment with the step. This is the easiest outward distinguishing mark between 1904 and 1905. On separate brackets on the left hand side a beautifully made brass-bound mahogany fitted tool box was mounted. Front



1905 FRANKLIN OILER

fenders had the same contours as before, but mounting was improved in appearance.

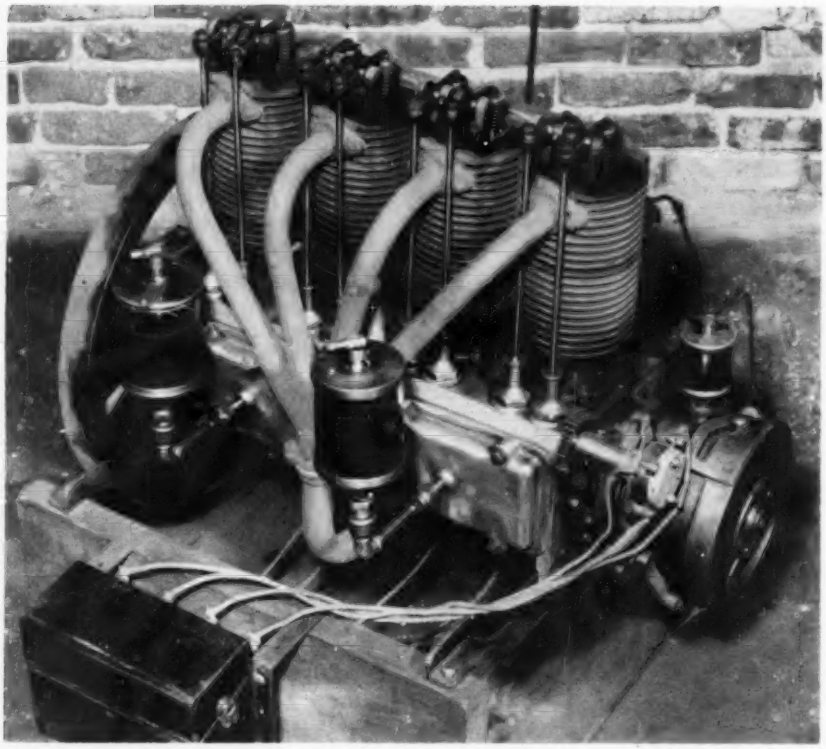
In all, of course, four types were produced, A, B, E, and F, to a total of 1113; serial numbers running from 921 to 2033. As far as records indicate, number 2033 was the last cross engine ever built.

Each of these types were the same mechanically. The same transmission and single chain drive was employed as before in the same wooden and angle iron frame. The engine boot was extended and formed with deep sides to afford protection to the flywheel and the transmission. The clutch lever was improved by the addition of a small quadrant and spring stop. Wheelbase was increased by two inches.* The front axle was made heavier, but of no appreciable change in design. Wooden artillery wheels carrying 28 x 3 clincher tires were used all around. Rear wheel brakes were changed to Raymond type external contracting, using the outside of same size drums as in 1904. In fact these wheels and drums are completely interchangeable. Construction of the bodies was unchanged. The door on top of the hood was eliminated and a more pleasing hexagonal pattern grill of brass was installed. The hinges at the front of the hood were replaced with a pivoted device that permitted the instant removal of the hood, a method Franklin used for about a dozen years. Full elliptic springs as usual, but heavier. Where the "A" was sold as a roadster and a tonneau was later acquired, it included a conversion kit to heavier springs. The wooden dashboard reverted in pattern to the original flat top. The steering column was given more rake, improving the general lines; the fat, chunky steering wheel previously used was replaced with a wheel of much slimmer design and a full 14" in diameter. A few of the 1905 cars were equipped with a steering wheel that had a small button switch in one arm of the spider, this was used to cut out ignition on long downhill coasts. The starting crank was permanently attached through the frame, and was nickle plated as were all controls.

The most noteworthy change in the car was in the power plant. It was of the same general type, 3¼" x 3¼". The cylinders were attached to the case with studs and double nuts instead of the bolts formerly used. The crankcase was essentially the same, four sump, barrel type as had been used before with such variations as the newer valve system demanded. This year, however, it was an aluminum casting, and the single steel inspection plate was changed to two cast aluminum plates. The dashboard side of the case was equipped with an oil level sight glass. Timing gears were fully enclosed, for the first time, in a cast aluminum housing. The camshaft gear this year was a laminated gear of bronze and rawhide, the flywheel gear being the usual steel.

This year it incorporated mechanically operated intake valves as well as exhausts, each of these valves was in a separate cage that could be removed for grinding or replacement by the removal of two capscrews. This model also saw the first use of the auxiliary exhaust valves that were to be a Franklin feature for the next seven years. On the down stroke the piston un-

* It is a source of amusement to us that our 80" antique has more rear seat leg room than our neighbor's Cadillac.



The unusual lubricators on the 1905 of Mr. McCarrell. The coils and wiring shown are for test stand purposes and are not original. OBSERVER PUBLISHING CO., WASHINGTON, PENNA.

covered a port through which, according to Franklin engineers, 70 per cent of the exhaust gas escaped, being prevented from re-entering the cylinder by a check valve. On the earlier cars of the year this check valve used a short, stubby flat-topped valve without any spring. These apparently chewed up rapidly, for it was soon replaced by a 1" steel ball. (On our own 1905 these balls are in perfect condition, while a flat-topped type that we inspected had little more than traces of the check left.) Separate exhaust pipes from both the auxiliaries in the rear and the regular exhausts in the front of the engine led to fan shaped fittings on a common stack underneath the engine. These odd shaped fittings were invariably called "the clutching hand" by the Franklin mechanics of the day. The use of the double exhaust system and the mechanical intake valves upped the output to 12-hp. Ignition was by four vibrator coils, dry battery powered through a Herz snap-off type timer as in the 1904 engines. A deep loop was formed in the rear engine bearer for the passage of the drive chain. In previous years this rear bearer was straight and the chain straddled it, any undue slackness in the chain caused slapping on the engine bearer with resultant severe wear on both chain and engine support; and no doubt, quite unpleasant noise.

A completely new oiling system, though still a splash system, was used this year. A vacuum, or air leak, type of oiler was developed and produced in the plant. This was an automatic device, and is interesting enough to deserve a description of its operation.

The line drawing shows the oiler connected with the crankcase and illustrates the means for governing the oil level. E is the crankcase, V is the vent tube, and the height of the lower end of this vent tube determines the height of oil in the crankcase. The vent tube is screwed into the oiler with an air tight joint. G is a cap which prevents the vent hole O from becoming clogged, this cap must be detached if oil level adjustment becomes necessary. T is the oil storage tank, C is a filler cap containing a leather packing to insure an air tight joint at this point. F is a chamber containing a valve which automatically closes when the filler cap is removed, and positively opens when the cap is in place.

As the oil level in the engine base reaches a predetermined low level, air rushes through the feed pipe into the oil tank and forces out enough oil to raise the level to a point which again submerges the feedpipe and stops the flow from the tank. If the vent tube is shortened the crankcase level will be raised, and if the tube is lengthened the level will be lowered by the exact amount the tube is altered. This adjustment is actually accomplished by cutting the tube or substituting a new one as the case demands. The L shaped device shown at A is actually only a handy guage to assist in determining the height in the crankcase.

In practice this device seemed to work quite well if care was taken to keep all joints airtight. Air leaks brought on flooding of the crankcase. This, while decidedly annoying, at least did not endanger the engine from starvation. If the tank was kept filled, you could be assured that it was reaching the engine.

In checking over several '05s for details, we discovered some interesting variations in oilers. Ours has the well-made polished brass tank and fittings that was the standard vacuum type engineered and made by the company. Mr. Buchman of Ohio, has one that operates on the same principle, but apparently was of earlier and somewhat cruder design. Mr. McCarrell of Pennsylvania, has an '05 that does not use this type at all, but instead has two quart size Lunkenheimer type drip lubricators, each one feeding through an opening in the aluminum inspection plates. There seems to be no dashboard or other unit control of these, and it must have been simply a case of memory to insure that the engine was getting oil. This is the only one of this type we have found. Mr. John Burns states that no such system was ever used on production cars, so we conclude that it was a conversion, for unknown reasons, from the vacuum oiler originally furnished. The only other automobile we know that used the air leak principle of lubrication was the Saxon of a half dozen years later, but perhaps there were others.

Methods of insuring an adequate supply of oil to the engine were evidently very much in a state of development during this period. The little Franklins from 1902 to 1905 used about a half dozen different devices; then in 1906, Franklin adopted the prevailing adjustable feed mechanical pump type, continuing with this until they brought out the first fully re-circulating system used.

When the 1905 engine appeared it was immediately apparent that it was quite superior to previous engines in overall per-

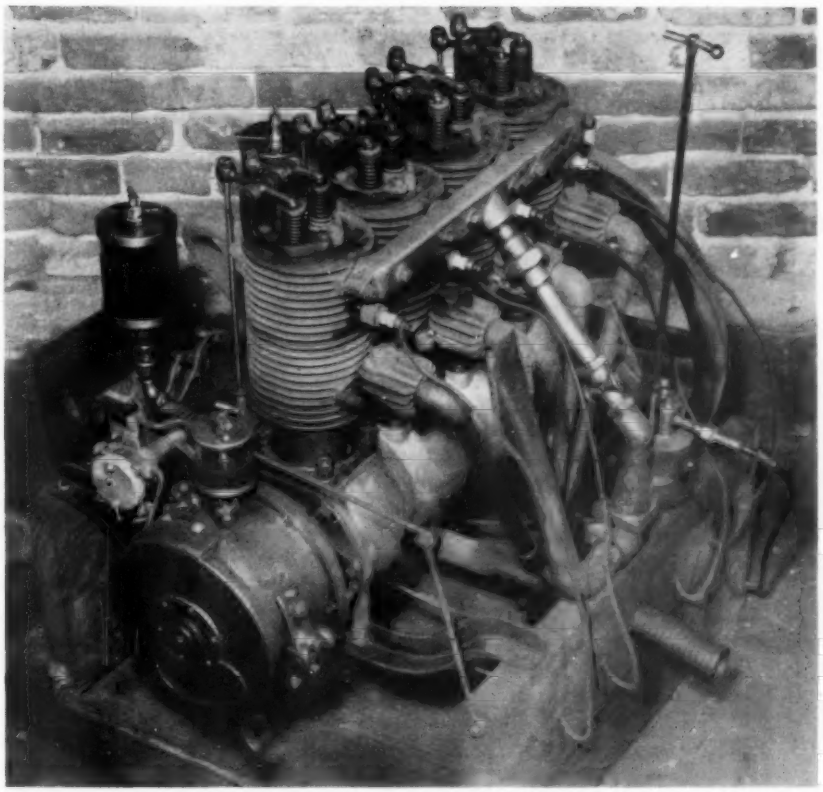
formance, smoothness and snappiness. Mr. Earl Buchman has told us of an interesting conversion that was worked out by Mr. Andrew Aubel and himself to bring some of the older cars to the newer standard of performance. On the 1904 with automatic intakes the valve cages were in line at right angles to the camshaft, while in the newer one they were lined up with the shaft. Mr. Buchman took the '04 camshaft, removed the cams and made up new cams for the intakes and re-assembled the shaft in place after making new openings in the case for additional cam followers and lifters. He then designed and made a set of dog leg rocker arm assemblies that could reach around the exhaust cages and operate the newly installed intake cages in the rear. These were made up in rights and lefts because of the only available locations for the new cam followers. Both valves being push rod operated, of course.

This change-over seemed quite worthwhile, for Mr. Buchman recalls that for some time he was kept busy making up conversion kits, which sold for $35.00. In the later kits an entirely new camshaft was made. The change-over was simple, using the existing cylinders without any alterations and only requiring the substitution of the new shaft and other parts with a minimum of machining to provide the four additional lifters. Of course the conversion did not include the auxiliary exhausts. Checking with Mr. John Burns and other old Franklin people, we found that the conversion was not performed at the factory; in fact, was apparently even unknown there; and we know of no other area except Aubel's Ohio territory where it was done.

In the last few years Mr. Buchman has combed Ohio, in the hope of resurrecting one of these most interesting converted engines, but without success. As far as any of us can learn, none of them still exist. While the search for an actual engine has produced nothing, we did receive a most interesting letter this spring from Mr. J. Walter Predmore, of Akron. Mr. Predmore says, in part:

"I . . . bought the Franklin June 6, 1904, from Mr. Aubel, agent in Akron. Mr. Aubel had the car brought down from Cleveland in the baggage car of the Valley R.R. The roads were so bad that they were afraid they could not make the trip from Cleveland to Akron. I had about an hour's lesson, then I drove my car with my family up to hear the dedication of the Akron City Hospital. The car worked nicely and we thought we had a nice trip. I soon learned how to repair that long drive chain because I was a little rough with my driving.

I don't remember how far I drove my car but I had it for two years, then I bought a new Franklin. I had three Franklins all told.



The engine of McCarrell's 1905 clearly shows the unusual exhaust system as well as the carburetor and complete induction system. OBSERVER PUBLISHING CO.

Going back to the 1904 car, Aubel made and designed new intake valves, changing from the poppet valve to a mechanical valve . . . to make the valves work he installed a new cam shaft . . . It seemed to help and steady the power, and I believe it was a real improvement . . .

I think Franklin was a wonderful car for its day."

ACKNOWLEDGMENT

In the attempt to make this little article as accurate as possible I have leaned heavily upon many people for their help and knowledge, especially the following:

MRS. JOHN WILKINSON

MISS MAUDE PAYNE OF THE DETROIT LIBRARY

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MR. EARL BUCHMAN

MR. W. FENTON MEREDITH

MR. CARL T. DOMAN

MY FATHER, A. H. AMICK, WHO DID MUCH OF THE SPADE WORK.

A Type F from the rear

Mr. van Groningen dug up this picture of a 1904 Type A taken during one of the first long distance reliability runs in Sweden during that year. The picture is from Automobiliens Historia, 2nd. edition 1949, by John Neren. Mr. Gustaf L. M. Ericsson of Sweden imported this Franklin late in 1903 and operated it for several years. In this run, however, the car was driven by a friend, Mr. Carl Skanberg, Mr. Ericsson drove a Benz in the same run. Unfortunately we do not have any record of the results of this run.

1906

Franklin advertising late in the fall of 1905, and automobile trade journal reviews of the same period indicated that the company expected to continue production of Type E for 1906 as well as the new line of shaft driven cars.

The *Horseless Age* of September 20, 1905, describes certain "improvements" to be made in the 1906 model. For instance the oiling system was again to be changed, "the engine is lubricated by means of a force feed device which gives a positive and adjustable feed, and is located on the dash directly in sight of the driver. One feed leads to the transmission case, and two lead to the engine base. The oiler is driven from the engine through a wire belt . . ." Another change indicated is . . . "the change gear lever has been placed inside the car, where it is more convenient, especially when the car is fitted with a top or closed body."

This car would have been fitted with the same 12-hp. engine as the 1905 cross engine cars and as the newly created shaft driven Model "G" was also fitted with this same size engine revised somewhat and adapted to "in line" mounting, it is likely that the company actually decided not to build two models so nearly at the same level. So far we have been unable to find any serial number or other definite record that any Type Es were actually built in 1906. Mr. Burns states, "It never had an inside clutch lever . . . no doubt they could have gone to it, but you can see it would have been a big job and there was a long movement to this lever from way back in low to away ahead in high . . . The sliding gear transmission operation of the Model D in 1905 proved to us that planetary transmissions were dead."

We must assume that 1905 spelled the end of this delightfully nimble little Franklin.

Franklin can probably be credited with another innovation, this one in the field of service. The Franklin organization recognized in their very first year of business that they had an obligation to the purchasers of their cars to aid them in securing the greatest possible benefit from their expenditure. The company also recognized that having dared to differ from the pack they must establish a record of performance and reliability well above that of the run of the mine automobile of the day. In that first year of production Franklin began the practice of sending out on the road expert factory mechanics who called on every Franklin owner, inspected his car, and made any repairs or adjustments that seemed necessary. In those early days of few garages, and fewer mechanics of any ability, this was of almost priceless value to the owner. The practice was continued for many years and was adopted gradually by other builders of high grade cars. I believe that Rolls-Royce does something similar to this day.

I think it would be interesting to quote parts from a 1905 interview with Mr. Franklin on this subject.

"A system of inspecting of customer's cars by factory experts, adopted by The Franklin Manufacturing Company when it first started building automobiles has continued since with great success. We have made it a rule to inspect every car sold after it has been in use by the owner . . . The object at the start was twofold—to satisfy the customer and to gain information for ourselves.

"A four-cylinder air-cooled car was a new venture. Dealers and motorists said it would not go. Prejudice was everywhere. We knew the car would go and spared no expense to demonstrate. This perhaps in a measure accounts for our rapid growth.

"But keeping in close touch with the cars in this way we gained a great deal of formation quickly—that is, we found out without delay just how the cars were performing and where improvements could could be made. I recall one special case which occurred before we had many cars out. A lumberman in Mississippi bought a car in Chicago. He had good success with the car, and one day was surprised to receive a call from one of our experts. It is needless to say that the Franklin car stands high in that vicinity and that we have made numerous other sales there.

"Many amusing instances have occurred. We once sent a man from Syracuse to a small town in Pennsylvania to fix a car which the owner wrote was absolutely no good, and which he said he would sell for old junk unless we made it right. In 'fixing' the car a repair man had taken the float from the carburetor and in some way it had been overlooked and no one thought to examine the carburetor again.

"In many cases we find that some repair man has attempted to make 'improvements.' He has 'improved' on the timing of the engine and in certain adjustments. In such cases we feel compensated for our trouble in that we not only straighten out the owner, but we also have the opportunity to set the repair man right."

A good many years ago some forgotten —and justly forgotten—phrasemaker attempted to brush off all Franklin qualities by dubbing it "an old man's car." Of course this stuck and is still occasionally repeated by people who have never even ridden in one. The phrase undoubtedly was meant to imply a lack of performance. If used with that connotation, it expresses ignorance; but there was some truth in the phrase—not intended by its author. Because of the engineering principles of John Wilkinson it was a car that an "old man" or the traditional "little school teacher" could drive. It had roadability far beyond that of the customary "street car school of design" that characterize many of its contemporaries. It had an ease of steering so outstanding that old Franklin

steering units are still sought by the country's top hot rodders. It also had a "from here to there" speed equalled by few cars. To digress from our chronology for a moment, there were few cars, if any, that could exceed the plain knock down performance of the Franklin of '30 and '31.

Few people, even among Franklin enthusiasts, realize that the little early cross engine Franklin had an outstanding racing record. For several years it made quite a name for itself on the track, not always winning but practically always somewhere in the money. Mr. Fenton Meredith has done considerable research on this phase of the little car's history, and a much condensed summary of his work follows:

Buffalo, August 16, 1904: "In the ten mile race for cars weighing from 881 to 1432 pounds, W. F. Winchester, in a Franklin, won with a flat tire. The tire burst in the second mile but he kept on to finish. His performance created much excitement and he was heartily cheered."

The Results

Ten miles for cars of any horsepower, 881 to 1432 pounds—W. F. Winchester, Franklin, 1st; F. Kulick, Ford, 2nd; time 12:24⅖.

Five miles for cars of any motive power, 551 to 881 pounds—W. F. Winchester, Franklin, 1st; F. Kulick, Ford, 2nd.

Five mile free for all—Barney Oldfield, Peerless Green Dragon, 1st; H. H. Lytle, Pope-Toledo Tornado (8-cyl.), 2nd; W. F. Winchester, Franklin, 3rd; George Graham, Winton Bullet, 4th. Time 5:10.

Long Branch, N. J., August 16, 1904

Quarter mile, best two in three—1st Heat: Johnson, Franklin, 1st; DeGray, Franklin, 2nd; Stockbridge, Oldsmobile, 3rd. 2nd Heat: DeGray, Johnson, Stockbridge. 3rd Heat: DeGray, Johnson, Stockbridge.

Providence, R. I., September 19, 1903

Five Mile Race—Won by A. R. Bangs, Franklin. 6:25⅖.

Syracuse, N. Y., September 14, 1903

Five miles—Dan Wurgis, Olds Pirate, 1st; John Wilkinson, Franklin, 2nd. 5:49.

Five Mile Handicap—John Wilkinson (scratch) Franklin, 1st; R. M. Cornwall, Franklin, 2nd; A. E. Petrie, Winton, 3rd. 8:23½.

San Francisco, Calif., November 11, 1903

Five mile open, 1200 pounds and less—W. F. Winchester, Franklin, 1st.

Five miles for gasoline cars only—24-hp. or less, W. E. Saunders, Toledo, 1st; W. F. Winchester, Franklin, 2nd. Time 6:46⅘. "Won by less than a length."

Dayton, Ohio, July 16, 1904

Three miles, stock cars, stripped—J. D. Platt, Jr., Franklin, 1st; C. C. Rooney, Marr, 2nd: C. B. Wolf, Haynes-Apperson, 3rd. 5:03.

Five miles open — J. J. Winchester, Franklin, 1st; Earl Kiser, Pope-Toledo, 2nd; Barney Oldfield, Peerless, 3rd; J. D. Pratt, Jr., Franklin, 4th. 7:27⅕.

Special March race—J. J. Winchester, Franklin, 1st; Earl Kiser, Olds Pirate, 2nd. No time given.

Three miles, stock cars—A. M. Dodds, Franklin, 1st; H. M. Carr, Franklin, 2nd; Harry Cappel, Cadillac, 3rd. 5:16⅖.

Light touring cars, three miles—H. M. Carr, Franklin, 1st; A. M. Dodds, Franklin, 2nd; J. J. Gardner (?) 3rd. 5:46.

Pittsburgh Hill Climb, Heberton Hill, July 7, 1904

Second Class 8 to 10-hp.—W. W. Murray, Franklin, 1:01⅘; S. J. Adams, White, 1:27⅗.

In the open event that Franklin was defeated by a Pope-Toledo by 7⅖ seconds.

Pable, Atlantic Beach, Fla., July 4, 1905

A Model E stock Franklin car owned by Dr. J. E. Boyd of Jacksonville, Florida, won 4 firsts and 1 second in the five events in which it was entered.

The *Florida Times Union* of July 5 says: "The fastest time in any of the five mile races was six minutes and one second, by Dr. J. E. Boyd's Franklin. When it was taken into consideration that all the five mile races were made with one turn, and that the rules required all machines to come to a dead stop before making the turn, the time made by Dr. Boyd's Franklin is considered most excellent, and it means that the machine was reeling off a mile a minute clip at some stage of the run."

Long Beach, Calif., August 20, 1904

One kilometer—S. G. Davis, Franklin, 1st; E. H. Stegg, White, 2nd. 1:00.

St. Louis, Mo., September 3, 1904

Five mile open—W. F. Winchester, 10-hp. Franklin, 1st; G. P. Dorris, 23-hp. St. Louis Motor Car, 2nd; Webb Jay, 10-hp. White, 3rd. 6:33½.

"In the second five mile event for the Anheuser-Busch Cup there were four entries, but Winchester again led, making the distance in 7:04.

Yonkers, N. Y., Empire City Track, July 24, 1903

Five mile open — John Wilkinson, Franklin 10-hp, 1st; time 6:54⅗; L. O. Gitchell, Darracq, 16-hp., 2nd; time 8:05 ⅘; F. A. LaRoche, LaRoche 12-hp., 3rd; time 8:11⅗.

Ten mile match — John Wilkinson, Franklin 10-hp., 1st; time 15:15⅕; Joseph Tracy, Renault, 10-hp., 2nd; time 17:07⅘.

Comments from *The Automobile* of August 1, 1903, concerning the Yonkers Meet: "Several surprises developed . . . chief of these was the wonderful and uniform speed shown by John Wilkinson's little Franklin—an American light car of daringly original design . . ." ". . . all world's track records from one to ten miles for gasoline machines weighing less than 1,200 pounds were broken by the Franklin."

So much for the little cross engine's record on the track, though this is far from a complete record of its competition. Let's see how it fared on the open road.

Automobile advertising was never noted for understatement, especially today, and the majority of the early advertisers did not do much to belittle their products. But here is a Franklin advertisement, or rather a part of such advertisement printed in *The Automobile*, July 6, 1905. "Type F, 5 passenger car, weight 1275. Speed on high speed clutch 5 to 30 miles per hour. Price with either fixed or detachable tonneau, $1700." We have a Type F, which

Type F of 1905.

RUHL STUDIOS

Carris scouting out the lay of the land in a dry wash. FRANK J. EARLY [CARRIS COLLECTION]

has original Herz timer with dry batteries, original carburetor and fuel system. It has been accurately clocked at 42 miles per hour.

Here are a few of the records set by the cross engine in other fields than track racing:

Eagle Rock Hill Climb

December, 1903—New record and gold medal in its class.

Los Angeles to San Francisco

June 15-16, 1905—L. L. Whitman in a Type E set new record of 37 hours and 57 minutes, lowering record 15 hours.

Long Island Economy Tour

Won by Franklin, carrying 4 passengers 190 miles for cost of $3.22, second place costs were $4.62.

San Francisco to New York

1904—L. L. Whitman and C. S. Carris set a figure of 32 days, 23 hours, 20 minutes. Previous time by water-cooled car 61 days.

This last record is one of the real epics of automobile history and should not be dismissed with bare figures. I will not attempt to tell the whole story here; I hope that will be done by someone, but for those who may not have even heard of this magnificent run I will try to bring out some of the highlights.

In the summer of 1903, Dr. H. Nelson Jackson and his Winton completed the undisputed first transcontinental crossing by motor car. By the end of the year at least three other crossings had been made, each by a water-cooled car. The best record of any of them was 61 days, and it is interesting to note that each of them was of the same order in time, 61 to 64 days.

Franklin decided to see what their light weight, flexible, 4-cylinder car would do.

At 5:00 p.m., August 1, 1904, L. L. Whitman, who held the water-cooled record, and C. S. Carris set out from Golden State Park in a stock Model A, Franklin. The car carried in addition to Carris and Whitman, over 200 pounds of duffle and gear. Their actual spares and equipment, other than clothing and personal baggage, consisted of one extra tire, three tubes, a can of engine oil, a few small parts, a set of spark plugs, and a kit of tools—and of considerable importance—an axe and shovel.

The story of the trip can best be told by briefly and sparsely quoting Whitman's own account of the record run.*

"Noon of the second day after our start found us at Sacramento . . . leaving Sacramento after lunch . . . we headed for the mountain pass known as Emigrant Gap . . . and as we neared that point, the road gradually grew worse. Large boulders had rolled into the road and streams trickling across the trail had cut deep ruts . . . At Colfax we stopped for the night. When we left early in the morning the summit (Sierras) was over fifty miles away . . . ever up we climbed on the low speed gear for hours . . . at 5 p.m. the last grade was mounted and the Franklin stood at 7,256 feet above sea level. Beautiful Donner Lake lay at our feet . . . We looked over the brakes and tightened up the reverse, and then down over ledges and rockstrewn trail . . . we pulled up for the night at Truckee. Next forenoon we ran down to Reno . . . We reached Clark, a desert station six miles west of Wadsworth a little after dark . . . Seventy-five miles away was the town of Lovelock, and no sign of life between except the railroad . . . On this desolate waste where not a blade of green grass, not a tree, not a drop of water are to be found, the sun blazes down with relentless fury . . . Over this desert to Ogden we made almost double the distance each day that I did last year with a water-jacketed engine . . . Many times a day we had to use axe and shovel, the machine would flounder in a hole, or catch on a stump or high ridge in the road . . . In many places the banks were steep, heavy sand filled the river bed, and crossing was difficult. Sometimes we had to follow the banks long distances to find a suitable crossing, and at times we were obliged to get the car up on the railroad track and bump over the sleepers . . . The washes, ruts, brush, stones, and sand were a test for any automobile, but the Franklin crossed this entire 600 miles of Sahara in seven days . . . The tenth day we reached Ogden at 5 p.m., the last day's run out of the desert being 137 miles . . . Between Rock Springs and Rawlins, while running at fifteen miles an hour, our rear axle caught on a telegraph pole that had been cut off a foot above the ground. We brought up good and solid and both of us flew out over the car in regular circus fashion . . . we looked over the machine and discovered only a bent truss rod . . . The last 100 miles into Denver were over fine roads; and at noon of the sixteenth day we entered this beautiful city . . . Through Kearny and Tremont we sped, and at noon of the fourth day from Denver we rolled into Omaha. Our next point was Chicago . . . the next day we crossed the State of Illinois, arriving at Chicago about 5 p.m. . . . Toledo, Cleveland, and Buffalo, after supper we ran to Rochester . . . Early next morning we were off again, being due at Syracuse in the afternoon. The reception, the banquet, at Syracuse, while ostensibly for the travelers, were in reality for the little car that stood by the curb outside.* . . . An early start next morning and we reached Albany before sunset . . . we stopped for the night at

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* *From Coast to Coast in a Motor-Car*, by L. L. Whitman.

* By mere coincidence the first annual banquet of The H. H. Franklin Club was held fifty years to the day after the banquet in honor of the Trans-Continentalists at Syracuse.

John Wilkinson in first car. MRS. JOHN WILKINSON

Peekskill, and nearly 300 miles for the day . . . The next morning dawned clear and fine—our last day . . . We arrived at the New York Automobile Club's building at 1:20 p.m. . . . thirty-two days, twenty-three hours and twenty minutes had passed since leaving San Francisco . . . 155 miles a day was our average, start to finish, over all kinds of roads and in some places no road at all."

I think the story of how this stout little car survived the San Francisco earthquake of 1906 as related in a letter* of L. I. Whitman to the Franklin factory should be told, as the little car still exists and has a permanent home in the living room of Ralph Hamlin of Los Angeles.

"I sent a telegram to you today, but it may be delayed in transit. With my wife I escaped from the destroyed city of San Francisco after three days of awful wreckage and horror. I got out the old, faithful transcontinental car, threw away the hamper, and carried fleeing people to Golden State Park, where thousands slept in the open and watched the destruction by fire after the earthquake had shaken the city.

The panic of the people was terrible. Martial law was enforced and the soldiers from the Presidio held the city. Many were shot for not obeying orders. I had a rifle shoved in my face by a soldier while I was after people in my Franklin. One driver who refused to obey was shot in his machine . . . I can't begin to describe the awful scenes. I put my trunk on the Franklin and, with my wife, left San Francisco this morning. We are 118 miles on our way, and if all holds together, hope to reach Los Angeles in a few days."

Yours truly,

L. L. WHITMAN

* * *

Salinas, California

April 21, 1906

The Franklin Company received a dispatch dated April 26 advising that the Whitmans had arrived safely in Los Angeles.

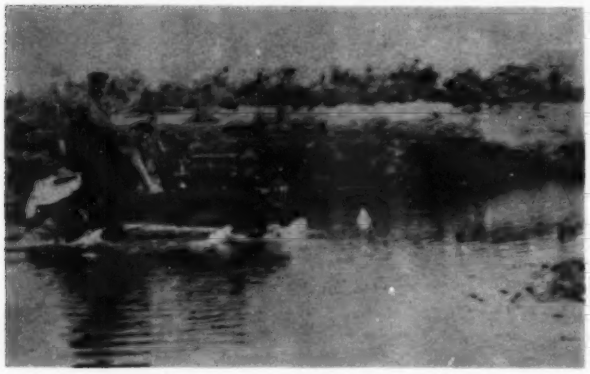
Remarkable as this run was it did not satisfy Franklin. Hardly three months after Whitman's escape from the wreckage of San Francisco these same men were to start from there in a 6-cylinder Franklin for a new record to New York that more than halved their previous effort. But this belongs to another period of Franklin history.

In those early days Franklin, like its contemporaries, made much use in their advertising of the testimonial letter. Possibly this most unusual "testimonial" will serve to close this article:

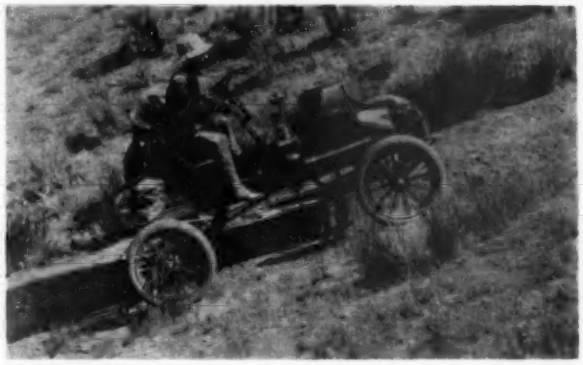
I purchased Franklin car No. 973 A, about the first of March of this year. I had so much confidence in it that I determined to try for the record from Colorado Springs to Denver, a distance of seventy-six miles. The record is now 2:55. The first twenty-five miles is an up and down hill proposition with many sharp curves, which generally occur at the bottom of two successive hills which are nearly at right angles to each other. I started on the trip

* Courtesy, *Floyd Clymer's Historical Scrapbooks.*

Whitman fording one of the innumerable streams.
FRANK J. EARLY [CARRIS COLLECTION]



Relatively smooth going in the desert.
FRANK J. EARLY [CARRIS COLLECTION]



last Thursday morning and covered the first forty miles in 1:45 with nothing but good road in front of me. I reached the top of a pretty good hill at 30 mph., when I was stunned by lightning. Two hours later I was picked up in an unconscious condition in the bed of a dry creek. It seems that after I was stunned by the lightning the machine made straight for the railing of the bridge in front of me, cleaned the right railing from the bridge and went over the side. The bed of the creek is ten feet below the bridge.

Now comes the part that is of interest to you.

The right front spring, the oak cross piece across the front of the frame, the lid to the spark coil were broken. The hood, the apron, and the right fender were bent. The cross steering rods were also bent. The next day the machine was run back to the Springs on its own power without adjustment. Had this accident not happened I would have lowered the Colorado Springs-Denver record to at least 2:45.

I will recommend the Franklin to my friends on three counts:

1. Speed.
2. Hill climbing ability.
3. Strength.

I believe that I can make Denver from here in 2:35.*

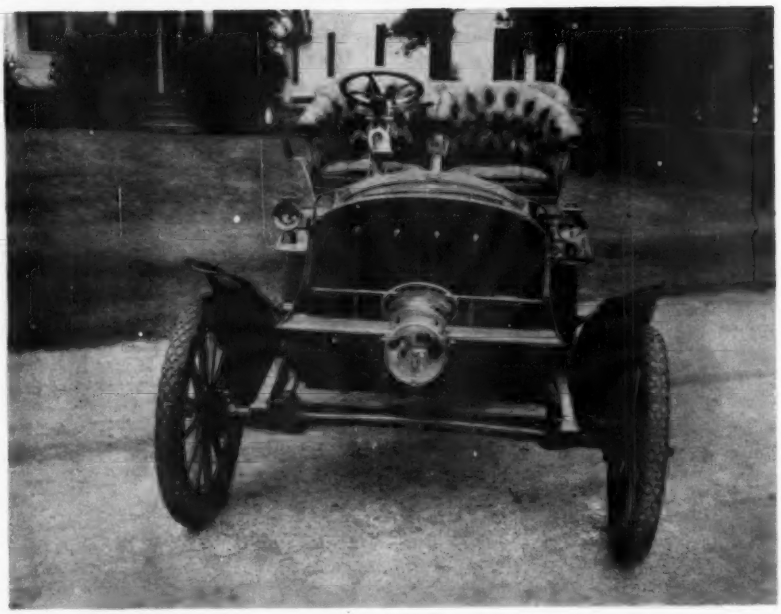
(s) CARL S. CHAMBERLIN
Colorado Springs, Colo.

June 14, 1905

* We have no record of whether he ever did.

At the time the cross engine story was written its author mentioned that he had not run across a 1904 with the dash curved as shown in most company advertisements. Since then several have been heard of and Dr. Sidney M. Strong of Atwater, Minnesota. sent in this picture of his No. 529 which clearly shows the type of dashboard.

On Dr. George Boyer's 1903 Type A the hood and dashboard are one unit shown detached and in front of the car. This provides a degree of engine accessibility almost as good as in any of Detroit's 1959 efforts. An HHFC team of Wilkinson, Kern, Buchman and Amick are starting the restoration of this gem from the President's collection. Apple polishing?



John Burns Column

The John Burns Column was formerly personally conducted by the late Mr. Burns. In future it will be handled by a board of Franklin engineers and special experts who, out of their wide experience, will undertake to assist members with their technical problems. In addition it will from time to time, as before, contain tips and suggestions sent in by members.

All correspondence for this column should be direct with the Editorial Office at Cumberland, Maryland. You will be expected to furnish this office with copies of your questions and the answers for possible inclusion in this column.

FRANKLIN SERIES 135

The Series 135 engine was initially an out-growth of the Series 12A or B or Series 130. Those engines had 3¼" bore and 4¾" stroke. Since more power was necessary as Franklin cars were getting heavier and heavier, it was decided to increase the bore to 3½", giving 272 cubic inches. The revised engine was designated as the Series 135.

When the engine was tested on the dynamometer, it was found that it gave 60 h.p. when the test procedures of 1929 were followed. In other words, 60 h.p. was the net horsepower with the engine equipped with cooling fan, exhaust system, air cleaner, fixed spark and fixed carburetor adjustment.

The testing of the engine revealed that #2 and #5 cylinders operated with mixtures much richer than the other four cylinders. This condition was found with the Orsat equipment for checking fuel-air ratios by taking samples of the exhaust, or by observing cylinder head temperatures by means of thermocouples. With the rich mixtures, #2 and #5 cylinders operated at temperatures lower than the other cylinders.

The Franklin Series 135 used the Swan patented manifold developed by Mr. Swan of Cleveland. The development work of that was carried on by the Chief Engineer, Charles Kirkham, of the Swan Company. In discussing the situation with Mr. Kirkham, it was concluded that the runner of the manifold was too close to the Siamese, with the result that the liquid fuel in the manifold would strike the ends of the manifold and glance off into #2 and #5 cylinders.

Subsequently, it was decided to design a new manifold where there would be ¾" area where the fuel would straighten as it made the turns into the Siamese #1 and #2 cylinder, Siamese #3 and #4, and Siamese #5 and #6. When this combination was tested on the dynamometer, it was immediately noted that the power was increased by 7 b.h.p. at 2500 r.p.m. Furthermore, it was possible to materially decrease the fuel-air ratio; in other words, to improve the fuel economy. The same manifold was tested on the Series 130 and an even greater gain was obtained—10 h.p. at 2500 r.p.m. The new manifold went into production on a model designated as the improved Series 135 in late 1929. There was no question about the increased power, as various Franklin owners and officials immediately found the increase and so stated many times.

A letter from Mr. Donald W. Kitchin, Jr., Kimberton, Pennsylvania, dated September 30, 1958, reading as follows, discusses his success in changing over an early Series 135 to incorporate the improved manifold: "Perhaps you remember my asking you about the difference in intake manifolds used on my 135 and Ray Keeler's. After thinking over what you told me, I became quite anxious to find an improved type manifold to install on mine.

"The first weekend in September we went out to Butler and visited Dr. Eckert. He has done a wonderful job of restoration on his '31 Dietrich convertible. In looking over his spare parts, we discovered a 135 manifold as well as the offset fuel transformer casting to go with it. He generously gave me these items in exchange for some machine work later on. Now they have been polished and aluminum paint applied and it is all in place on my engine.

"Everything went together perfectly, only a slight lengthening of the throttle rods at the clevises being required. It was easy to see the reasons for the improvements you mentioned. The new manifold has much clearer, shorter, and less sharply curved passages.

"My first trip proved just as you said. The engine has always been smooth, but it is even better now. It starts quicker when cold, idles even better, pulls more evenly at low speeds, and has more power at 40 m.p.h. or above.

"To say that I am pleased with the performance and appearance of the new manifold is putting it mildly. I feel grateful to Dr. Eckert and to you for giving me the information which started me off on this project."

Carl T. Doman

October 24, 1958

MUFFLER BACK FIRING

Back-firing in the muffler is most liable to occur when driving down hill with the car in gear. It is caused by unburned charges of fuel passing into the exhaust and being exploded by hot exhaust pipe or muffler.

The reason that unburned charges pass into the exhaust is that the mixture is not correct for driving under the above condition or that the ignition system is not in perfect order.

If the back-firing occurs when the throttle lever is in its closed position, it is an indication that either the throttle valve or the vaporizer valve is not tight. If the trouble is in the throttle valve the back-firing can be stopped by closing the needle valve.

Even though the throttle valve or vaporizer valve does leak, back-firing can usually be stopped by cleaning and adjusting the spark plugs and ignition breaker points.

In this connection it should be emphasized that the practice which some drivers have of turning off the ignition when going down hill causes diluted engine oil and frequently exploded mufflers.

Bulletin No. 660, May 1923

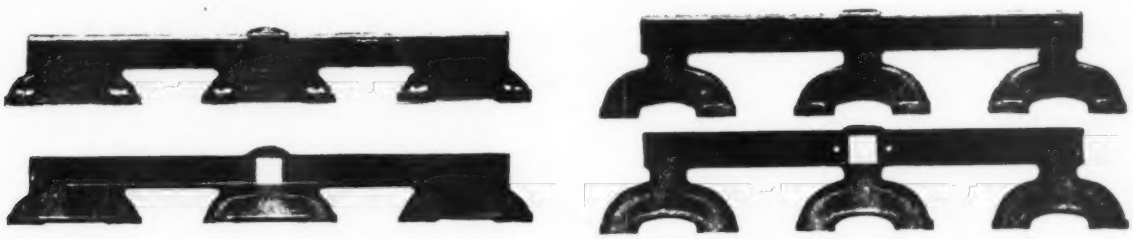


FIG. 18—CHANGES MADE IN MANIFOLD DESIGN

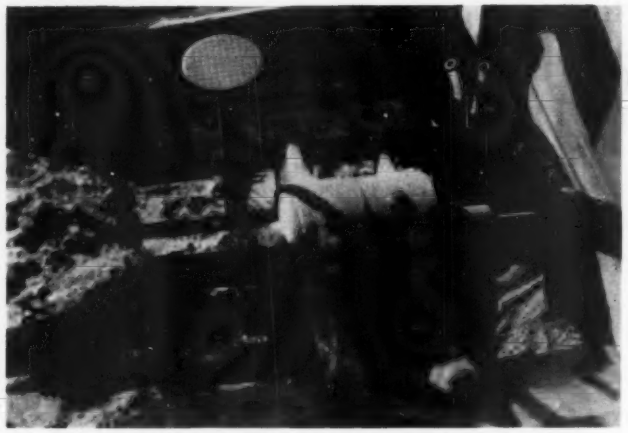
The Manifold Before a Change Was Made Is Illustrated by the Outside and Sectional Views at the Left: Those at the Right Show the Manifold After the Change Was Made

E S Cameron

One time builder of good automobiles, has now reached an age where he would be more than justified to sit back and dream of his past automobile achievments, the Cameron steamer, the Cameron air cooler, the Cameron aviation engine and other uncounted lesser developments, but that, seemingly, is not his way. Only about a year ago he sent us photographs of a newer type of fuel injector that he was developing and his most recent letter, from his Reamstown, Pennsylvania home, stated that he felt the time was now ripe for the return of the air cooled car and that he was then considering undertaking the design of such a car.

Mr. Cameron was raised in Brockton, Massachusetts and was one of the many men who entered the automobile field through an initial interest in bicycles. He built racing bicycles for only about two years and then built, in 1899, his first car, a steamer. The following year he built a three cylinder radial steam engine and combined this with shaft drive for his second steamer. It has been claimed for Mr. Cameron that this was the first use of shaft drive in this country. Mr. Cameron manufactured a few dozen of these steamers and then became interested in the gasoline engine. He immediately decided that the proper design was direct air cooling.

Showing compact transmission case and the end of torque tube on the 1903.



The Cameron Car

In 1902 Mr. Cameron undertook the manufacture of his first gasoline car, a one banger air cooler, but more of the car later. We have not had the time to check with Mr. Cameron but we have what we believe to be a chronological list of the various plants and their locations where the Cameron was built during it various stages. First the James Brown Machinery Company of Pawtucket, R. I.. 1902 - 1905, United Motors Corporation as sales agents; Cameron Car Company, Norfolk, Virginia, 1906; Cameron Car Company, Brockton, Massachusetts, 1906 - 1908 and the same at Beverly, Massachusetts, 1908 - 1914. Then we also have listed the Cameron Manufacturing Company, New London, Connecticut, 1909 - 1910, with further dates under the same name of 1914 - 1916 in New Haven, Connecticut and 1917 - 1918 at Norwich, Connecticut. Then Cameron Motor Company, Stamford, Connecticut, 1919 - ? The aviation engine was made by American Die and Tool Company, Reading, Pennsylvania in 1946. All this sounds confusing but is in line with the best information we have to date.

This 1902 car mounted a one cylinder engine of about 6 HP. the cylinder had a semi-domedhead with valves set at an angle. The car, naturally, had shaft drive and also had a sliding gear transmission of two speeds. For his later models he developed the characteristic Cameron system of horizontal valves in the head operated by massive walking beams. These beams were actuated by direct contact with the camshafts, one on each side, which were partially exposed. Cameron advertising made much of the opposition of the valves, claiming that the incoming cold charge cooled the exhaust more efficiently than with other valve in head types. The new head design did permit of higher compression ratios and in its mid years the Cameron acquired a very creditable competition record.

IN COMPETITION

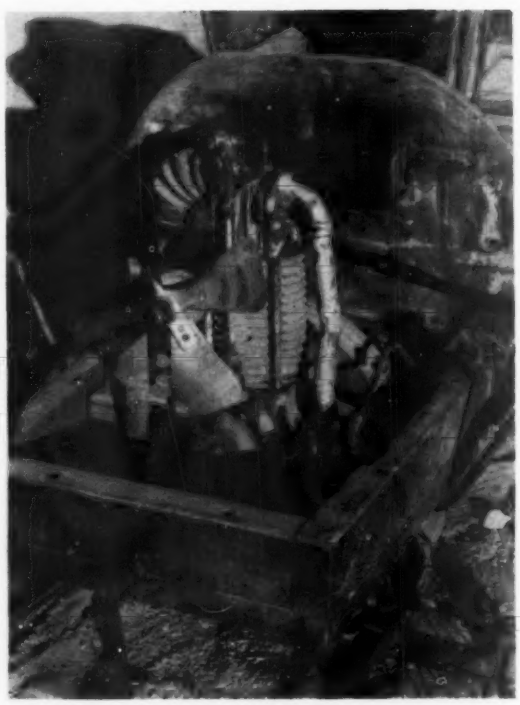
At the famous Dead Horse Hill Climb at Worcester, Massachusetts on June 6th, 1910, three Camerons entered in three separate events, driven by three different drivers. Each won a first place. In 1908 it had broken its class record for this noted hill, the 1910 time clipped 15.1 seconds from the previous year's record.

In the Vanderbilt Cup Race Sweepstakes of 1908, a Cameron car was second. It is quite impressive to note that its time for the four laps of 23.46 miles each varies less than 11 seconds, or less than one half second per mile. In the 1910 South African Road Race conducted by the Transvaal Automobile Club a Cameron not only made the best time of the day against an imposing field of six English, five French and three other American cars, but broke the record for the course. The South African Mining Journal, in commenting on the race, said of the Cameron: "It demonstrated thoroughly that it not only cooled efficiently but could stand harder driving in extreme heat than any of the water cooled cars."

This is by no means the competition history of Cameron, but will serve as an indication that Mr. Cameron had fabricated a line of tough little automobiles.

The Cameron retained its unusual valve arrangement through its later years. Aircooled cars were built through 1912 according to our best information, the first six being produced in 1910. An unusual spur gear transmission mounted on the rear axle was adopted in 1908 and continued through the later cars.

In 1913 Mr. Cameron turned over his facilities for the production of First War rifle barrels and did not resume automobile production after the war. In later years he became interested in the field of aviation.



This engine picture shows top of carburetor near frame on right side of picture; the fins on exhaust stack and the supplementary coil spring between pushrod and rocker arm to reduce tappet noise, surely an early use of this arrangement. Timer may be seen below fan blade.

An "as found" picture of Mr. Colee's 1903 runabout. This little job with all wood frame, body and fenders was of 66" wheelbase and only 40" tread. An ideal city car for today.

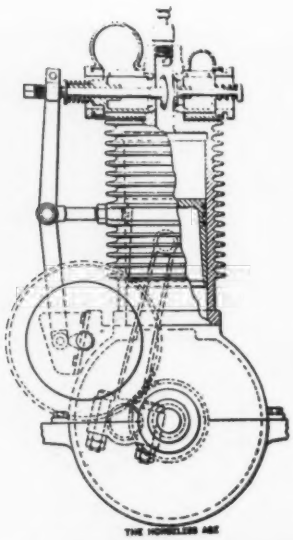
Gearshift lever on the steering post of this 1903. Certainly one of the first uses of this device.

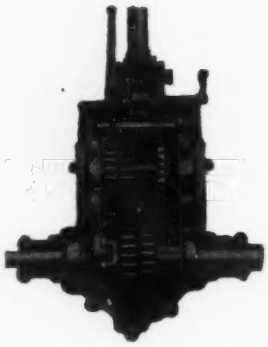
Member Easton Imler of Phoenix, Arizona, has provided us with the pictures and the specification data on the 1903* of Mr. Don Colee, also of Phoenix. As far as we know this is essentially the same as the 1902 Cameron. This car has a one cylinder engine, 4 x 4, of about 6 HP, the cylinder has a semi-domed head with valves set at an angle, overhead rocker on the exhaust and automatic intake; float feed carburetor, splash lubrication with a unique arrangement of a kick pedal connected to a pump to supply additional oil as required; two speed sliding gear box with a steering post mounted change gear lever (this in 1902-03) and left hand drive; shaft drive with a torque tube and spur gear differential; cone clutch and the single brake, mounted in front of transmission, operated by a single pedal. The whole car weighs about 400 pounds. It bears this wording on the kick strip, Cameron Car, United Motor Corp., Pawt. R. I., Mfgrs.

Mr. Miles Thompson of Cumberland, Maryland, has furnished us with the data on the 1904. This car, of course, employs the newly designed head with its walking beams but still retains the automatic inlets. In the 1904 the three cylinder engine of 3⅝ x 3¾ was rated at 12 HP. It retains most of the features of the 1903 and in addition has combined the lower part of the crankcase with lower half of the gear box into one unit, bolted to the wooden frame, comprising what amounts to essentially unit construction. Clutch is an inverted cone type and steering device employs a bevel gear and sector. Frame, fenders and body are of wood.

Mr. Thompson's own Cameron, a 1905, follows the 1904 very closely in specifications except that it is a four cylinder and both valves are mechanically operated by the walking beams from two camshafts. In Mr. Thompson's car the steering gears are completely unhoused, somewhat singular when considering the real advanced design shown in so many details. Both the 1904 and the 1905 use bevel gear differentials with only two enclosed pinions, the ring gear is integral with the cast steel differential cage.

*Mr. Cameron's letter of December 30th says: ". . . it is an early 1903 model, we changed to wood wheels the middle of that year."





This unusual Cameron designed transmission was brought out in 1908.

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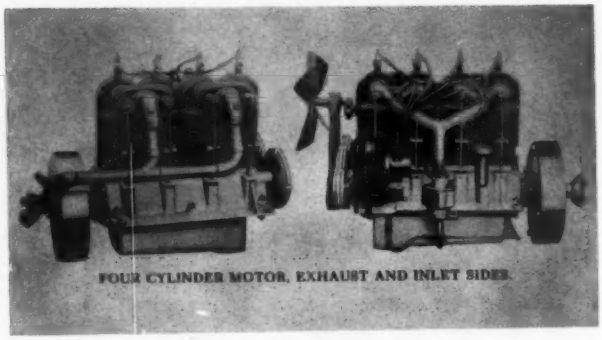
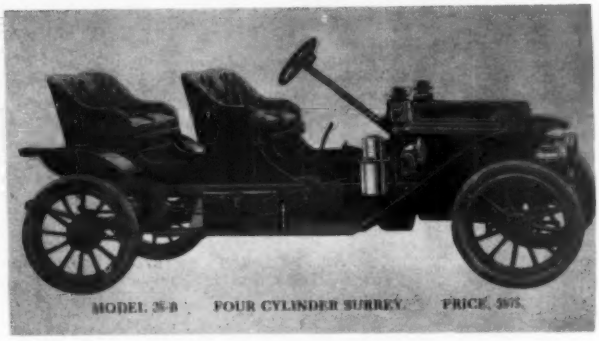
This clearly shows operation of the walking beam system. The 1904 still retained the automatic inlet but installed valves horizontally opposed as in all later engines.



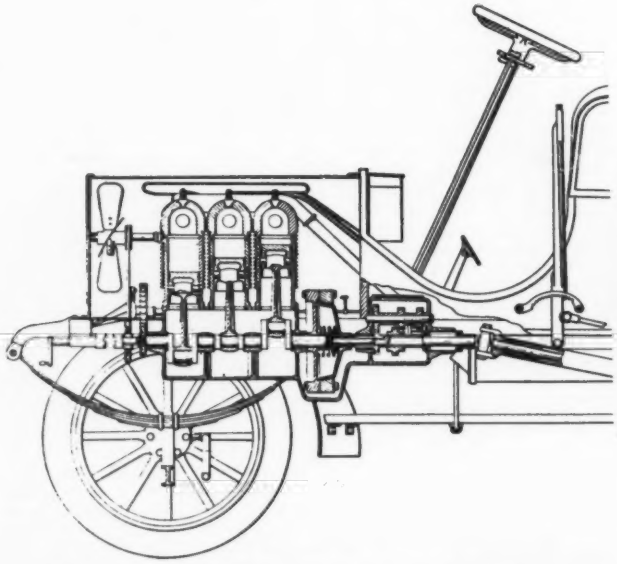
FOUR CYLINDER MOTOR, EXHAUST AND INLET SIDES.

A weight of 1050 pounds was claimed for this fully equipped 1904 side entrance touring. It sold for a dollar a pound.

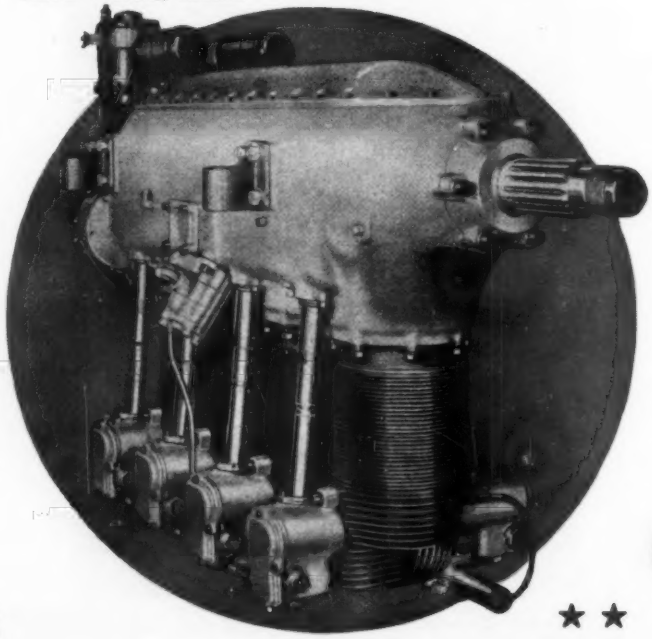


MODEL [illegible] FOUR CYLINDER SURREY. PRICE [illegible]

The inverted 125 HP light aircraft engine built in 1946 still employs the Cameron style horizontally opposed valves, operated by pushrods and compound rocker arms instead of the earlier walking beams.



The single unit lower case of the engine and transmission housing, as well as the reversed cone clutch are shown in this line drawing of the three cylinder 1904 model.



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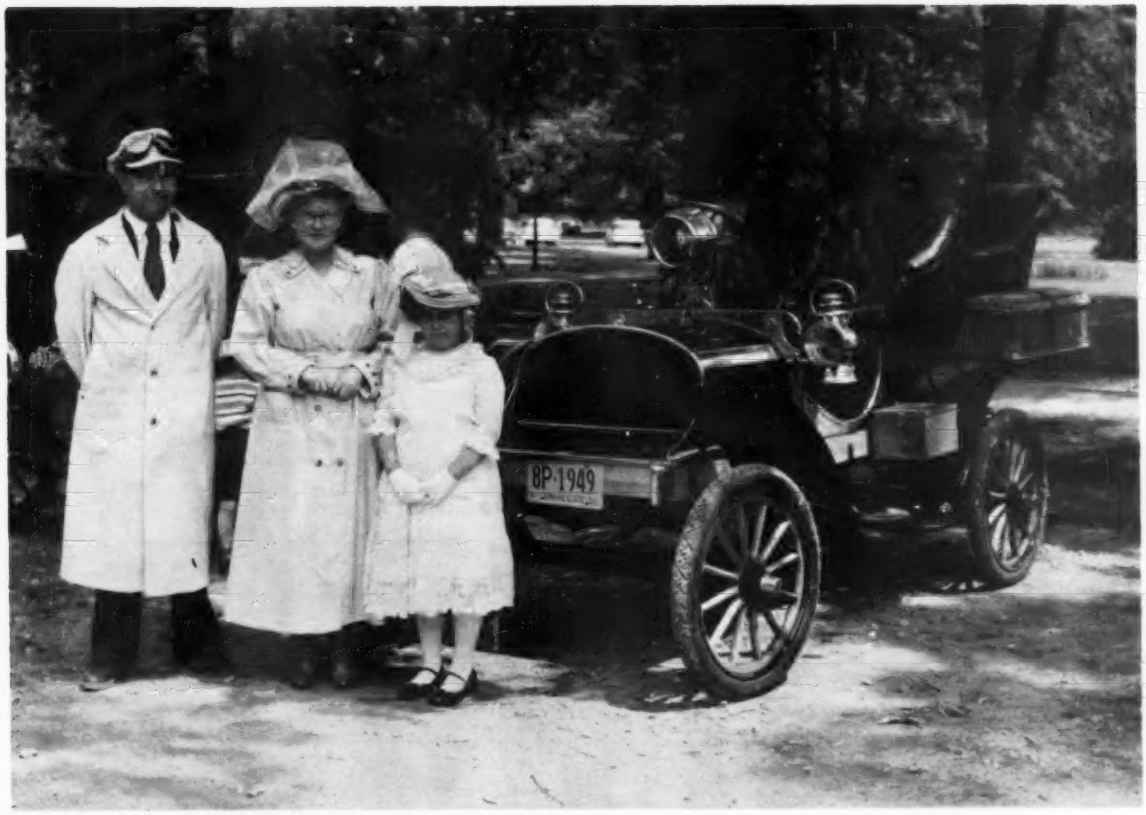


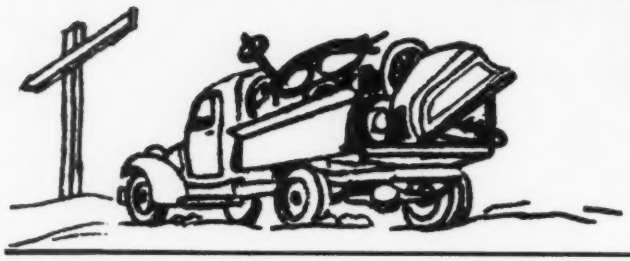
The Laurence Petries of Ogdensburg, New York and their very fine 1905 Type F. This little car has been a consistent prize grabber this past season. We hope that you are going to see it at Syracuse this year.

The Editor really needs help. . . This cross engine number is the fourth issue devoted exclusively to a particular period. In this one we have tried to cover the cross engine as completely as our space will permit to the exclusion of any coverage of other periods. We believe this is a good and proper way to gradually tell the whole story of the various eras of Franklins. BUT this is the third period issue in a row that is devoted to the early years. It is high time that later cars are covered in equal detail. The publication files are almost bare of any material on these later cars, barring a relatively small number of pictures of member's cars, but still contains considerable material and pictures of the early years. Merely static pictures of cars are not enough, we must have interesting, well written articles about later cars. Member Tom Hubbard has promised an article in this field for the next issue, with, we hope, some really good pictures. But that is not enough, we must have supporting articles of the same era. This editor's personal experience with Franklins is extremely sketchy after the first war, he simply does not have the data or the experience to write intelligently about Franklins of the Twenties and Thirties, he can go on and on writing about the '0 years and the 'teens but that is about all. It is a wee bit hard to understand why we have no apparent difficulty in getting both interesting stories and worthwhile pictures of those way back years but do have to beg for them of the later years when unquestionably the late cars much outnumber the early ones in the club. Cannot some of you people help out on this? Pictures of your present 1928 or 1933 are welcome but they are far from enough, we must have comprehensive studies of cars of these years. We would very much like to put out an issue dedicated to the de Causse, don't we have a member somewhere who will undertake to cover that period in a manner comparable to Meredith's splendid study of the Renault? We are sure that Meredith did not consider himself a professional writer either, if that's what is holding you back. He achieved his splendid results by research, work, careful checking and a strong desire to bring out something worthwhile. We must have a few more like him somewhere.

While everybody has been reading (we hope) about cross engines seems an opportune time to bring forth a pet idea of ours. For this year's Trek we would like to organize a light squadron of the little fellows. We will bring our F (This is going to be embarrassing if we don't make it), we were counting on Ronnie Andrew but he has recently received "greetings", so guess that is out unless he wangles a leave or turns it over to a friend, how about it Ronnie? We will manage somehow to give Earl Buchman and Stan Wilkinson a bad time if they fail to appear with their runabouts. We have already asked John Tyson to bring along his well known green rear entrance job and Laurence Petrie, over in Ogdensburg, has finished up a good looking Type F that we're counting on. We hope that Gloria Palm will show up with her Type E and, along with Ruth Franklin and her Type F, or the '03, make their first Trek. Then there's Eb McCarrell of Pennsylvania who is long overdue at a Trek with his 1905. Cathey from way down in North Carolina has a 1904 runabout that should be seen. The Ed lives at the half way point and is always good for a sandwich, how about it?

Bill Swigert has one cached away over in Pennsylvania, and Bill has not yet been to a Trek, the same goes for Austin Clark from Long Island and his good looking yellow tonneau. Then there are three down in Texas, Dan Williams and Liston Zander both have '05 runabouts, while Frank Eidelbach has about the oldest cross engine alive. Dan why don't you boys hire one of those new car trailers and bring 'em all along? We would all get a big kick out of a caravan from America's second largest State. Let's hear from you cross engine pilots.

THE MARKET PLACE



Classified advertisements are free to members, subject to available space. Advertisements from non-members may be accepted, without charge, at the discretion of the Classified Editor. Illustrated advertisements may be accepted if accompanied by a clear glossy photograph and a check for $4.00.

Members are reminded that misrepresentation in advertisements may result in their being dropped from the Club rolls. They are further reminded that the publishing of their advertisements entails an obligation to answer all inquiries.

Henry C. Courten, Editor, Box 127, Bethpage, New York

FOR SALE

1929 Sport Coupe, good body and tires. Needs top and turtle deck. $250. F. L. Reed, 1316 Regent Street, Alameda, California.

1929 Sedan, Model 130, partially restored, on blocks 5 years; ran 10,000 miles a year for 4 previous years. Available for transfer for use and preservation (not for parts or hot-rodding). Needs battery, muffler, one cylinder plate. Engine, body, roof very good. Tools and spare parts. Forest K. Davis, RFD, Adamant, Vt. (Ed. Note: Mr. Davis seems to indicate that his car will be given to anyone who will provide a good home!).

1928 Series 12B Sedan, original upholstery, fender mounts, new top, new chrome, paint and mechanical condition good, tires fair. Make offer or will trade for open Franklin. Burton S. Valiton, 829 West St., Lunenburg, Mass., Tel. Fitchburg-Diamond 2-1940.

Small engine and clutch parts for Series 10, pair of new valves for Model 135, new left front fender—year unknown (smooth crowned, shallow tirewell with six tiedowns). Very reasonable. Laurence A. Petrie, Box No. 1, Ogdensburg, New York.

Practically any part for Series 11 while they last, reasonable prices. Wish to correspond with owners of 1908-09 Model D or H. Jack L. Wadsworth, 264 W. Pamela, Arcadia, California.

Series 11 or 12 "Lion" for sale to someone who really needs it. Clifford Boram, 104 Oak Street, Maywood, Illinois.

Series 11B, Four passenger club sedan. Original except for top and clock, towable, good parts car. Need space—$150. E. L. Robinson, 917 Greenway Avenue, Morrisville, Pennsylvania.

Transmissions $15.00 each; springs $5.00; late cylinder $2.50; piston and rod $1.50; also dismantling 1931 with rusted body. Need fenders for 1923 sedan or will sell car for $150. Have many parts for 1929 to 1931, some price lists and manuals for Series 9 through 19B. Fred Zigrest, 150-36 Tahoe Street, Ozone Park 17, New York.

1904 Cross Engine Franklin with rear entrance tonneau; has 1905 engine, no transmission or lamps, unrestored—$850. Robert Gerrity, Westhampton Beach, New York.

Miscellaneous Franklin parts available. Contact Earl B. Pfannebecker, Latham, New York.

Several frame rails for Series 9B, 10 and 11. Also many other parts for various models. Edward Landmichl, Jr., 3826 West 65th Place, Chicago Lawn 29, Illinois.

Some parts from 1908 on, new timing chains for later models, valves, "Lions" and other parts. A. K. Miller, West Topsham, Vermont.

New oversize pistons and pins for 1917; cylinders for 1921-1923; for 1930-1934 cylinder springs, transmissions, crankcases with shafts, valves, gaskets, valve springs, generators, starters, clutches, differentials and many other parts. Joseph W. James, 552 Woodland Drive, Hempstead, New York.

"I have a 1910 barrel hood, Franklin Model D. Serial #8331D, restored three years ago and a second maintenance job done last year, new tires and top, leather upholstery all original, rear hub caps have been fabricated in brass from later model but balance of car all authentic. Valued at $3,000, consider trade for preferably foreign made antique or classic. Franklin Watts. 1301 W. Flagler St., Miami, Florida."

Parts 1921-25: Crank case $10; valve cover, $7; exhaust pipe, $4; exhaust manifold, $9; intake manifold, $7.50; cross over pipe, $5; 2 sedan doors 23-25, $20; 2 front wheels and rims, $25; front bumper, $10; rear bumper, $10; complete front axle, $20; 2 1921-25 front springs over and under $30; 1 fan and shield, $7.50; 5 650x18 Firestone tires and tubes, 95% tread, $90; S-130 and 135 cars for parts. Pompton Lakes Auto Wreckers (Joseph De Lorenzo) 122-140 Cannon Ball Road, Pompton Lakes, N. J.

Parts for Series 9B Franklin, 1921-1923, incl. Extra motor, rebuilt, with clutch and throwout collar. No carburetor. One complete front axle. Two front wheels. Need new wood. One rear wheel. Springs, spindles, steering arm. Two brake bands complete. H. F. Puariea, 1605 First St., Milwaukie 22, Oregon.

1929 Four Door, good condition. Owner no longer able to renew drivers license. Henry C. Shippee, 1519 Courtney Ave., Hollywood 46, Calif.

For Series 13 or later: Set of four wheels and six 19" demountable rims complete. $25. For Series 10: Transmission gears, case, and air compressor. For 1910 Model H: Jump seats. Pinion gear. For 1909 Model D: A few miscellaneous parts. G. W. Lamphere, West Rutland, Vt.

WANTED

For 1906 Model D Touring—Require photo, drawing or descriptive information on brake assembly; same for hub caps. Will someone lend a manual? Eston F. Imler, 5703 North 12th Avenue, Phoenix, Arizona.

For 1932 Series 16—All dash instruments. R. E. Lower, 2531 South Limestone, Springfield, Ohio.

For Series 10 Coupe—Seats, turtle deck, left hand window raiser and channel, king pins and bushings (prefer brass bushings). Have a few Franklin parts. Will look up information for members in own library, including wiring details. Miles A. Lusk, Box 241, New Kensington, Pennsylvania.

1912 to 1914 Roadster or Touring in restorable condition. Might possibly be interested in one somewhat later. Richard E. Francis Jr., 81 Wilson Avenue, Neptune City, Avon Post Office, New Jersey.

A 1903 owners manual. If not for sale would like to borrow for photostating. A. H. Amick Box 535, Cumberland, Maryland.

LEADS

1928 Airman Sport Sedan, body and wood very poor. Part of estate. Contact Wm. W. Norton (member), 2827 Woolsey Street, Berkeley 5, California.

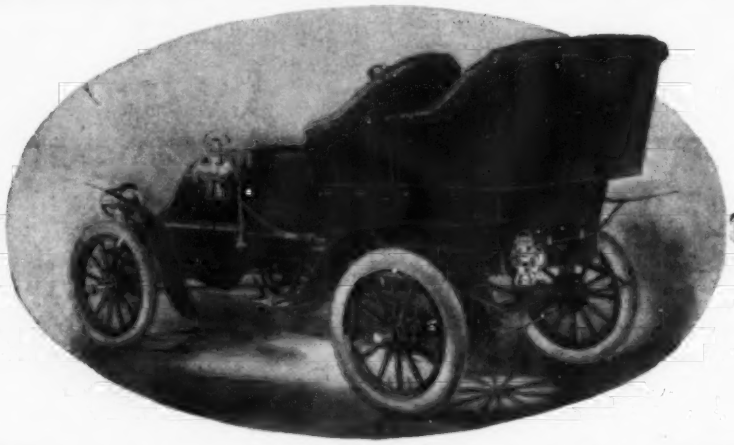
For 1909 Model D Touring—Pattern for rear fenders. Would like to correspond with other Model D owners. Jack Wadsworth, 264 West Pamela Road, Arcadia, Calif.

Cross Engine or Barrel Nose Franklin. Restored or unrestored. Brass script for my collection of early brass automobile script. Arthur Evans, Bangor, Pa., R. D. 2.

For 1929 Franklin 135—Purolator oil filter, parking light, throttle, gas and oil gauges, speedometer, air filter, heater, new 19" tire flaps. Willard Prentice, 1727 East 35th St., Baltimore 18, Maryland.

In 1958 those of us who were responsible for the publication and the "housekeeping duties" of the Club set what we fervently hope was an alltime record for "goofing off". Now, with some considerable and protracted effort we have caught up on the year.

Now we hope we can count on you to make it easier for us. We ask two things, PLEASE send in your dues as soon as the statement reaches you, and PLEASE keep us promptly informed throughout the coming year of any change of address. If you will do those things your name will be inscribed in our Golden Book.



FRANKLIN

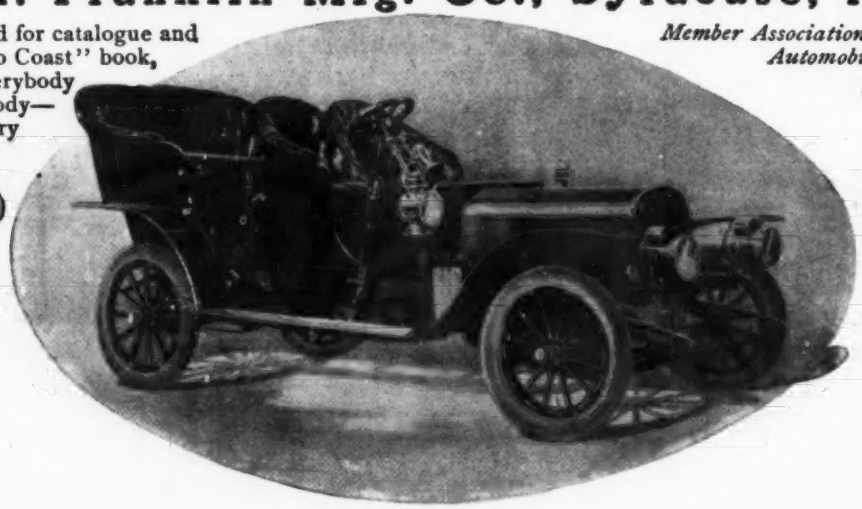
The six *Franklins* are by far the fastest cars of their size and weight and cost. For example, the 12 horse-power 1275 lb. Light Tonneau (made in three styles—tonneau detachable, side or rear entrance) will go more miles in a day and give more in practical automobiling the year round than heavy cars rated at 18 to 20 horse-power.

The reason is simple: We were the first American maker to build four-cylinder cars, and we have made air-cooling a distinctive success from the very start. We understand air-cooling and four-cylinder, and the mechanical engineering that goes with them, thoroughly and absolutely. We have a success to offer you—not an experiment.

The *Franklin* four-cylinder Runabout is the fastest American Runabout at any price. This is a new model and we have sold already twice the number we first intended to make. The *Franklin* 20 horse-power and 30 horse-power Touring-cars are the most powerful to weight and the most simple of all touring-cars. All *Franklins* are so set on their springs that they ride comfortably and put little strain upon the car on rough roads. All *Franklin* cars are sensitive and true of control, and all are the most marvelous hill-climbers of their class.

The main questions are: cost, speed, reliability, comfort, and cost of maintenance. Look into the last question good and hard and interview a *Franklin* owner.

H. H. Franklin Mfg. Co., Syracuse, N. Y.

Send for catalogue and "Coast to Coast" book, which everybody —everybody— reads every word of.

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